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CHRONIC MYELOGENOUS LEUKEMIA

AGE INCIDENCE, DURATION, AND BENEFIT DERIVED FROM IRRADIATION *

GEORGE R. MINOT, M.D.
THOMAS E. BUCKMAN, M.D.
AND
RAPHAEL ISAACS, M.D.
BOSTON

Irradiation treatment of chronic myelogenous leukemia was first undertaken by Senn [1] in 1903, using long wave length roentgen rays. It was not until after Rénon, Degrais and Desbouis,[2] in 1913, and Ordway,[3] in 1917, reported the effect of radium on the disease that adequate irradiation was given at all frequently so as to produce very often marked alleviation of symptoms. In recent years and with the advent of short wave length roentgen-ray therapy, constantly greater numbers of these patients in an increasing number of localities are receiving intensive irradiation with great benefit. The reports by Ordway,[4] Peabody,[5] Giffin,[6] Vogel,[7] Wood [8] and Rosenthal [9] are among those that indicate the value of this form of treatment.

It is recognized that irradiation frequently brings about striking remissions of the disease, so that patients who are often in a distressing and sometimes an apparently serious condition can be returned to a useful and functionally efficient existence. However, there is very little information in the literature concerning such facts as the duration of chronic myelogenous leukemia and the length of time irradiation enables these patients to remain efficient. Enough time has passed since the inauguration of intensive irradiation to evaluate the end-results of a series of cases, and this is the particular purpose of the present communication. It is not our object to discuss here the most suitable method of treatment, but simply to present in a statistical manner certain aspects of the disease and the results of irradiation therapy.

* From the Medical Service of the Collis P. Huntington Memorial Hospital of Harvard University.

* This paper is No. 36 of a series of papers on the physiology and pathology of the blood, from the Medical School of Harvard University and allied hospitals, a part of the expense of which has been defrayed by a grant from the Proctor Fund for the Study of Chronic Disease.

1. Senn, Nicholas: New York M. J. **77**: 665, 1903.
2. Rénon, Degrais and Desbouis: Bull. et mém. Soc. méd. d. hôp. de Paris **36**: 54, 649, 1913.
3. Ordway, T.: Boston M. & S. J. **176**: 490 (April 5) 1917.
4. Ordway (Footnote 3). Ordway, T., and Gorham, L. W.: Oxford Medicine, New York, Oxford University Press **2**: 681, 1920.
5. Peabody, F. W.: Boston M. & S. J. **177**: 873 (Dec. 20) 1917.
6. Giffin, H. Z.: Boston M. & S. J. **177**: 686 (Nov. 15) 1917; M. Rec. **94**: 1020 (Dec. 14) 1918; Minnesota Med. **4**: 132 (March) 1921.
7. Vogel, K. M.: Nelson Loose-Leaf Medicine, New York, T. Nelson & Sons **4**: 66, 1920.
8. Wood, F. C.: Irradiation Treatment of Leukemia, abstr. J. A. M. A. **79**: 67 (July 1) 1922.
9. Rosenthal, E.: Berl. klin. Wchnschr. **56**: 1113, 1919.

MATERIAL STUDIED

The data have been compiled from the records of 166 typical cases of chronic myelogenous leukemia.[10] At least one of us has seen and studied continuously 110 of the cases. We have studied only the records of the remaining fifty-six cases. Nineteen of the patients are living, and the data are incomplete on seventeen cases, so that thirty-six are not available for statistics concerning the end-results. For the latter purpose there are 130 cases; seventy-eight of these patients have received intensive irradiation, chiefly from radium, and fifty-two have been given no form of irradiation. These two groups are comparable because there is no distinction that can be detected in the character of their disease. A considerable number of the seventy-eight patients have not received treatment of the degree or frequency, or in the manner that would seem today most suitable, but all have had what is usually considered at least an effective amount of intensive irradiation therapy: an amount that produced distinct improvement in a very high percentage of the cases. Thirty-six of the fifty-two patients who form a control series to the seventy-eight irradiated patients suffered from chronic myelogenous leukemia prior to the date of introduction of intensive irradiation therapy. Sixteen of the fifty-two developed their disease in the last ten years. They received no irradiation because of either refusal of therapy or an incorrect diagnosis until they entered the hospital in a terminal state. The latter patients do not represent acute cases since some had their disease four years, and lived for about as long a time on the average as did all the other patients.

AGE INCIDENCE OF THE DISEASE

Before we consider the different aspects of the life of the irradiated and nonirradiated patient with chronic myelogenous leukemia, some facts concerning the age incidence of the disease and the time elapsing between the first symptoms and diagnosis will be given.

A curve in Chart 1 shows the percentage frequency by decades of the time in life of the onset of the disease in the 166 cases. It also shows a similar curve constructed from one given by Ward [11] for 247 British cases. These curves are much alike and show that the greatest number (55 per cent.) of cases occur between the ages of 30 and 50. The decade of life in which the most cases in either series occurred was from 35 to 45 years of age. It is of historical interest to note that the twenty-five cases reported by Bennet [12] in 1851 show an age incidence which is strikingly like that shown in Chart 1. In his series there was a relatively large num-

10. Some of these cases were studied at the Massachusetts General Hospital and a few in private practice. The cases Peabody [5] studied are included in this series.
11. Ward, G.: Brit. J. Child. Dis. **14**: 10 (Jan.-March) 1917.
12. Bennet, H.: Month. J. M. Sc. **12**: 17, 197, 312; **13**: 97, 317; **14**: 331, 1851.

ber of patients above the age of 50, probably because no distinction was made at that time between the lymphatic and the myelogenous type of the disease. The data concerning the age incidence of the disease given by Cabot [13] for eighty-nine cases, Vogel [7] for forty-seven cases, Lazarus [14] for thirty-seven cases, and Giffin [15] for fifteen cases, appear to yield a similar curve to that of our cases and Ward's. These data are not complete enough to record in the same manner as those plotted in Chart 1.

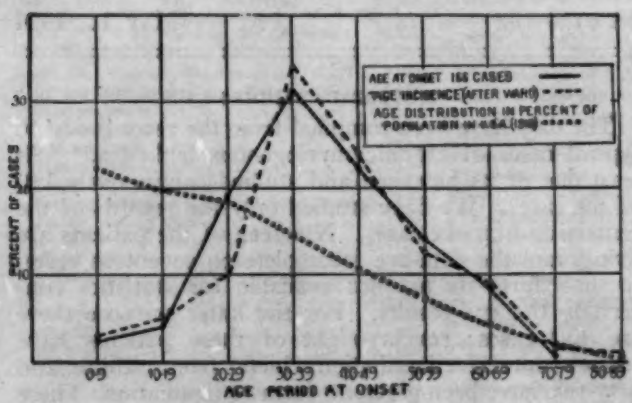

Chart 1.—Age frequency of chronic myelogenous leukemia.

It is common to determine the age at which a disease is most frequent by comparison of the number of cases at one time of life with those at another time. The comparison of the percentage of cases of any disease occurring in a given decade with the percentage of population of the same age has seldom been done. In Chart 1, a curve shows the percentage frequency by decades of the population of the United States in 1910. A comparison by the division of the percentage of our cases of chronic myelogenous leukemia per decade with the percentage of living persons of like age indicates rather strongly that this ratio after about 30 years of age remains practically constant at a point around two. Comparable data for both the British cases (the statistics for the British population in 1900 were utilized rather than those for 1910, as many of Ward's cases appear to have been observed prior to 1900) and ours have been studied for the decades 25 to 34, 35 to 44, etc., as well as our cases for the decades 20 to 29, 30 to 39, etc. This analysis further shows a surprisingly uniform incidence of the disease after the age of 34, but indicates that there is a slightly greater frequency between 35 and 44 than in any other decade. For this decade the ratio of population per hundred to cases of chronic myelogenous leukemia per hundred is 2.5 for the British and 2.25 for the American series. For both the American and the British series it is 2.1, or within 0.06 of this figure for the decades 45 to 54 and 55 to 64. In the decade 65 to 74, when but few cases are available for statistics, it is close to 1.5 for both series. Between the years 25 to 34 inclusive, it is 1.5 for the American and 1.6 for the British series. The disease is not only absolutely but also relatively very rare below the age of 10. The incidence gradually increases from this age to 34, faster in the later than in the earlier years. The ratio of population to cases of the disease is, respectively, for the ages 0 to 9, 10 to 19, and 0 to 24, 0.09, 0.24 and 0.15 for the English, and 0.10, 0.21 and 0.23 for the American series.

13. Cabot, R. C., in Osler and McCrae: Modern Medicine, Philadelphia, Lea & Febiger 4:659, 1915.
14. Lazarus, A., in Nothnagel's Practice, Philadelphia, W. B. Saunders Company, 1905, p. 647.
15. Giffin (Footnote 6, second reference).

FREQUENCY IN MALES AND FEMALES

Of the total 166 cases, ninety-three (56 per cent.) were males and seventy-three (44 per cent.) females. The total number of cases of chronic myelogenous leukemia recorded by Cabot,[13] Vogel,[7] Ward,[11] Giffin,[15] Lazarus [14] and ourselves add to 605; 60 per cent. were males and 40 per cent. females. The analysis of the proportion of sexes at various age periods made by Ward [11] shows that above the age of about 25 it remains about constant, and that in the younger there is a relatively slight predominance of females that have the disease. Our analysis of the total 605 cases before referred to shows the same.

There is no evidence that the disease runs a different course in males than in females. The statistics referable to the total number of cases presented in the figures hereinafter given do not discriminate between the two sexes. There is no necessity for doing so because a study of the data has shown that there is no essential difference in the facts obtained for all cases and those for men or women.

TIME REQUIRED FOR DIAGNOSIS

The onset of chronic myelogenous leukemia is insidious, early symptoms often being ease of fatigue, loss of strength and weight, mild gastro-intestinal symptoms, and those attributable to increase of metabolism. The latter become more prominent later, as do those referable to an enlarged spleen and anemia. On account of the character of the initial symptoms, it is impossible to define with any accuracy the exact time the disease begins. It has been taken from the time that any symptoms first develop that reasonably could be attributed to leukemia. It is probable that in some cases there is a long latent period (months and even years) before definite symptoms develop. This is suggested not only by the history of several cases, but also from blood examinations, particularly of two cases, that we have made prior to the occurrence of symptoms referable to leukemia. One of these two patients had an injury, the other an acute bronchitis, when the blood was first observed. Now, four and six years later, both are living, in good health. They have had irradiation and still show a blood picture entirely consistent with that of chronic myelogenous leukemia. The recognition of this disease very early in its course is most unusual, because of the insidious nature of its onset.

TABLE 1.—*Duration of Disease Before Diagnosis*

Number of Cases	Date	Average Time in Years From Onset of Disease Before Diagnosis
24	1896–1910	1.50
46	1910–1917	1.48
68	1917–1923	1.24
Total 148		Average 1.40

The patient seldom seeks medical advice until some symptoms have existed for months. At that time the nature of the disease is evidently often not appreciated. Many physicians from whom our patients first sought advice apparently postponed proper physical and blood examinations, presumably because of the mildness of the symptoms: an error to be avoided by thorough study of every case, no matter how trivial the com-

plaints may seem. The facts are that on the average for 100 cases of chronic myelogenous leukemia a physician was not consulted until about eight months after the appearance of the first symptom. Often the correct diagnosis was not made immediately, so that it was not established for several more months.

Table 1 gives data concerning the amount of time elapsing between the appearance of symptoms and diagnosis, it being on the average 1.4 years. In the more recent years it appears that the diagnosis is made somewhat sooner than formerly. It has been usually true, on the one hand, that those cases diagnosed soon after the first signs of illness have had a rapid development of symptoms and thus represent many of the more acute cases (not one of the 166 cases was one of true acute leukemia). On the other hand, many of the most chronic cases apparently presented some symptoms for even years before the nature of their disease was recognized. Such aspects of the natural history of the disease are to be borne in mind when evaluating some of the data given here.

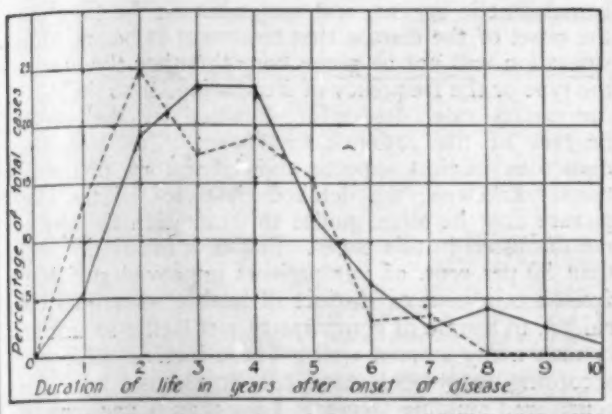

Chart 2.—Incidence (per hundred cases) of duration of life of 130 patients with chronic myelogenous leukemia, of whom seventy-eight received irradiation treatment (solid line) and fifty-two did not (broken line).

DURATION OF LIFE OF IRRADIATED AND NONIRRADIATED PATIENTS

Statistics concerning the length of life after the onset of chronic myelogenous leukemia are very meager. Generalized statements are common, some indicating that the disease seldom lasts over two years, and others that it usually runs its course in from three to four years, but that it may do so for nine to twelve years. Klewitz and Schuster [16] report on the duration of life of twenty-six patients treated with irradiation. The average length of time their patients had the disease was a little over two and one-half years. These authors conclude that irradiation therapy is incapable of essentially prolonging life, though the fatal outcome is possibly delayed on an average of a few months. Giffin [17] gives the duration of life of fifteen patients treated by radium and then splenectomy, and, as he says, his data show that there is no reason to infer that such therapy permits the disease to run for more than its usual duration of from two to three years. Three of his patients had a very chronic form of the disease, and it had been present before splenectomy for from five to about nine years; as in the usual cases, the treatment does not appear to have effectively prolonged the life of the latter patients. Papers presenting various aspects of treatment of from one to three cases, rarely more, are not infrequent. Few state the duration of life, but those cited above as well as Rénon and Degrais [18] and Brandt [19] treat the subject more fully than others.

Table 2 and Chart 2 give information concerning the duration of the disease in 130 of our cases; fifty-two were not treated by irradiation and seventy-eight were so treated. As the table shows, the average duration of life of the nonirradiated patients was 0.46 years less than the irradiated patients, the average length of the disease being 3.50 years for the treated patients, and 3.04 years for the control series. The age at which the disease occurs does not appear greatly to influence its duration, though the figures suggest that in those past 50 years of age the average duration is shorter than when the disease develops between the ages of 20 and 50. However, life expectancy is normally shorter in older than in younger persons, and this factor may account for the shorter duration after 50 years of age.

Chart 2 gives curves illustrating the percentage frequency of the duration of the disease in years for both groups of patients. The two curves, though not identical, are quite similar; that for the nonirradiated patients rises more abruptly and falls somewhat faster, indicating that there were rather more patients in the nonirradiated group living less than two years, and fewer living over six years. The few very chronic cases in which the patients were living six years or more, that have fallen into the group of cases treated by irradiation, would very probably have shown about the same longevity if irradiation had not been given. This is suggested because many of these patients had symptoms for a long time prior to therapy and were recognized as having the type of case that progressed sluggishly. If these cases are excluded, it brings the average duration of life of the irradiated and nonirradiated patients nearer together.

The duration of the disease in twenty-five cases, selected because it was believed that treatment was given most suitably and within one and one-half years after onset of symptoms, was on the average exactly the same as that for all seventy-eight patients treated with irradiation. The average span of the disease in these twenty-five cases was a few months longer than that of similar nonirradiated cases diagnosed at approximately the same time after initial symptoms appeared. Thus, the early institution of irradiation does not promise a more favorable prognosis with respect to life extension, so far as can be told from the data at hand. Such might occur in cases treated exceedingly early.

TABLE 2.—*Duration of Life of One Hundred and Thirty Patients with Chronic Myelogenous Leukemia*

Treated by Irradiation					Not Treated by Irradiation			
Average Duration of Life in Years	Number of Cases			Age by Decades	Number of Cases			Average Duration of Life in Years
	Females	Males	Total		Total	Males	Females	
2.00	1	1	2	1-10	0	0	0	....
3.41	1	3	4	10-20	2	0	2	2.50
3.43	9	6	15	20-30	9	8	1	3.72
3.66	12	8	20	30-40	21	12	9	2.66
4.00	5	9	14	40-50	13	7	6	3.73
3.61	8	9	17	50-60	5	3	2	2.01
2.34	4	2	6	60-70	2	1	1	2.70
3.50	40	38	78	Totals	52	30	22	3.04

16. Klewitz, F., and Schuster, E.: Deutsch. med. Wchnschr. **48**: 1003 (July 28) 1922.
17. Giffin (Footnote 6, third reference).
18. Rénon and Degrais: Bull. et mém. Soc. méd. d. hôp. de Paris **44**: 1511, 1920; Bull. de l'Acad. de méd. **85**: 207 (Feb. 15) 1921.
19. Brandt, T.: Norsk Mag. f. Laegevidensk. **84**: 761 (Sept.) 1923; abstr. J. A. M. A. **81**: 1916 (Dec. 1) 1923.

To show further the effect of beginning treatment early or late, the seventy-eight patients have been divided into two groups, depending on whether irradiation was begun before or after the middle of each patient's illness. (As all these patients are now dead and the total duration of their illness is known, determination could be made of the time when each had had the disease for 50 per cent. of its total duration.)

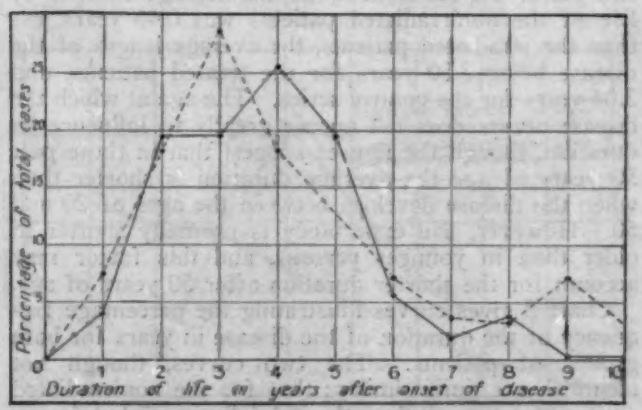

Chart 3.—Incidence (per hundred cases) of duration of life of fifty-one patients (solid line) with chronic myelogenous leukemia in whom irradiation was begun in the first half of the disease, and of twenty-seven patients (broken line) first irradiated in the second half of the disease.

Fifty-one were treated before and twenty-seven after the middle of the disease. Chart 3 shows the percentage frequency by years of the duration of chronic myelogenous leukemia in these two groups. From the data given here it would seem that irradiation did not alter the length of life of those cases that were doomed to be short, or affect the duration of those that were destined to be long. The statistics given in Charts 2 and 3 suggest that if irradiation lengthens life for a few months, it does so more particularly for those persons who have the disease from three to five years. There are relatively and actually more patients living a long time in the group first treated in the second half than in the first half of their disease. This fact should not be interpreted as indicating that early treatment shortened life. Probably it is indicative only of the natural chronicity of these cases, the heatlh of the patients not having been impaired enough to permit a diagnosis until they had had the disease for more than two and one-half and up to seven and one-half years.

The figures clearly demonstrate that irradiation therapy has rather little effect (some might conceivably interpret the figures as showing no effort) on lengthening life. They show that about 42 per cent. of the patients lived from two to four years, there being about an equal frequency of those living from two to three as from three to four years; that about 12 per cent. lived more than five years (the longest case was of ten years' duration); and a similar number, 10 per cent., lived a year or less after symptoms occurred. Nearly twice as many patients (22 per cent.) lived between one and two years as between four and five years (13 per cent.).

EFFECT OF IRRADIATION ON THE EFFICIENCY OF THE PATIENT

In spite of the fact that irradiation therapy has not prolonged the life of patients with chronic myelogenous leukemia at the most for more than a few months, this form of treatment is distinctly valuable for these patients. No other remedy equals irradiation in producing symptomatic benefit and in maintaining efficiency, even though no permanent results are obtained. Continued irradiation, properly administered, offers the best guarantee of the longest possible preservation of the patient's working capacity. An adequate dose of radium or roentgen rays causes, as a rule, striking general clinical improvement coincident with the approach to normal of the formed blood elements and basal metabolism. As time passes by, irradiation becomes less effective. The degree of improvement varies with the amount and character of irradiation, the state of the hematopoietic organs, and somewhat on the time after the onset of the disease that treatment is begun. Consideration will not be given here to either the amount, the type or the frequency of irradiation, or to the details concerning rate, degree or duration of the varying degrees of the patient's improvement as told from numerous clinical aspects and laboratory determinations. Likewise, the detailed character of the blood picture and the other guides to irradiation therapy are not discussed in this paper. Suffice it to say that more than 50 per cent. of our patients improved sufficiently from a condition of distinct ill health, sometimes bedridden, to a state of comparative well-being so that to a layman many seemed well. These include those who, according to present standards, would not have been considered suitably treated. Less than 5 per cent. did not improve to a degree of health that rendered the patient at least reasonably efficient, by which is meant a state that permitted life being worth while, with the patient up and about, doing some light work. It has been recognized for a long time that spontaneous remissions rarely occur in chronic myelogenous leukemia, which is in sharp contrast to the great frequency of marked remissions that follow irradiation. Definite spontaneous remissions of a moderate degree occurred in four (7.7 per cent.) of the fifty-two nonirradiated patients, while what may be considered very mild remissions took place in a few others. In nonirradiated

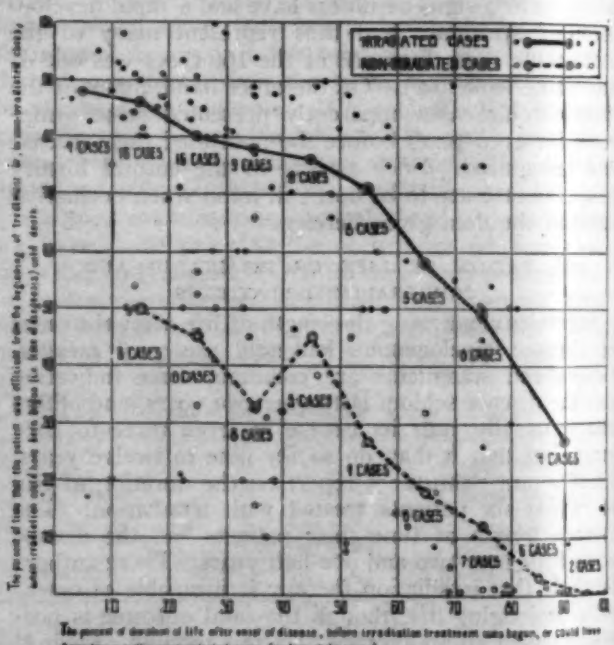

Chart 4.—Efficiency after irradiation treatment of seventy-eight patients with chronic myelogenous leukemia and after diagnosis (a time when irradiation treatment could have been begun) of fifty-two similar patients that received no irradiation.

patients, progressive, slow downfall is usual, though the patient may remain for a long time in a poor state of health. With continued proper irradiation, the patient often maintains a relatively high degree of efficiency, though it becomes less as time passes by.

Chart 4 has been constructed in order to attempt to evaluate in a broad way the benefit of irradiation to the patient. The precise degree of efficiency is not considered, but simply whether improvement resulting in efficiency, as defined above, occurred, and for how long the patient remained in such a state of health. In order to make comparisons of the duration of efficiency of all the irradiated and nonirradiated patients, Chart 4 has been constructed. Each dot represents one case. The ordinates represent the value of percentage duration of efficient life after the first irradiation, or when diagnosis was made in the cases in which irradiation was not given, divided by the total length of life after irradiation was begun or diagnosis made. The abscissas represent the percentage of the total life that had passed between the onset of the disease and the time of the first irradiation or diagnosis. Connected by the solid heavy line are dots that show the average for each group of patients with 10 per cent. increase of life duration prior to receiving irradiation; and the dots connected by the broken line illustrate the same for the nonirradiated patients after diagonsis.

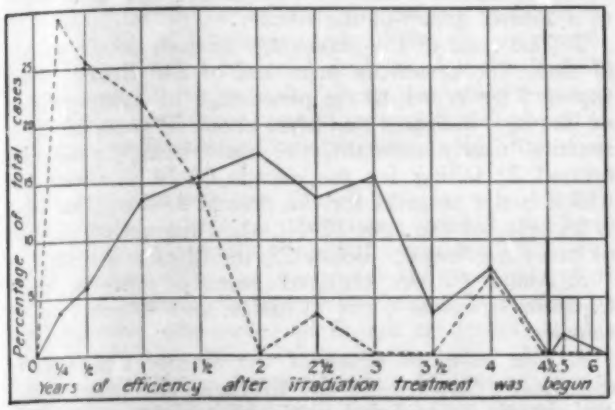

Chart 5.—Incidence of years of efficiency of seventy-eight patients with chronic myelogenous leukemia, of whom fifty-one (solid line) received irradiation beginning in first half of disease, and twenty-seven (broken line) in second half.

There are more cases diagnosed late in the nonirradiated series than in the irradiated, for reasons given above under the heading of "Material Studied." Important fundamental difference in the nature of the disease in the two groups is not apparent. The time between diagnosis and the beginning of irradiation in nearly all the cases has been less than a month, and rarely as long as two months. Irradiation could not have been begun before diagnosis in the cases in which irradiation was not given, so that time taken after diagnosis in this series is comparable to that of when irradiation was begun in those so treated. The difference of a few weeks acts to favor the curve for the percentage duration of efficiency of the nonirradiated patients. In spite of this, it is most evident that there is a striking difference in the duration of efficiency as compared to the length of life after irradiation or diagnosis in the two series of cases, no matter whether this therapy is begun early or late. The patients treated by radium or roentgen rays were efficient on the average for at least 30 per cent. more time, to say nothing of the fact that the degree of efficiency of the irradiated patients compared to the nonirradiated was very much greater. The scattering of the dots in Chart 4 indicates that individual cases vary considerably from the mean. The data show that the percentage of efficient life usually remains high, over 80, when irradiation is begun before the middle of a given patient's illness. After that time, the later the initial irradiation is given, the less the percentage of duration of useful life becomes on the average. This is quite comparable to what happens in the nonirradiated patient, the difference being that the duration of efficiency from any given time after onset to death is much less than in the treated patient.

The data show in graphic form that irradiation definitely increases the time that patients with chronic myelogenous leukemia can be able and useful. The actual amount of time that each patient remains efficient after therapeutic irradiation varies with the total duration of his disease. Chart 5 shows the percentage frequency of efficient life in six-month periods of the fifty-one patients first treated before the middle of their disease, and of the twenty-seven patients first irradiated after that time, no matter whether this point was reached in months or in years. It is evident on inspecting this chart that the usual patient treated late remains efficient a shorter actual period of time than many patients treated early. The patients living four years or more and irradiated only after the middle of their disease were of a distinctly chronic type, as revealed by their blood picture and previous clinical course.

Chart 6 has been constructed to show the relationship between the time that irradiation was begun after the onset of symptoms and the duration of efficient life after the first treatment. Each dot represents one of the seventy-eight cases, and the dots connected by the solid line show the mathematical mean of the time of efficient life, in relation to the time treatment was begun in six-month periods. The first two periods are for three months.

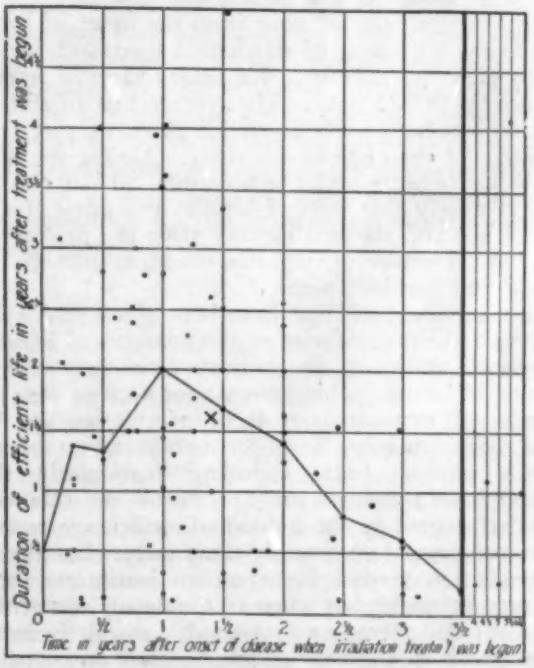

Chart 6.—A comparison between the time that irradiation treatment was begun and the duration of efficient life in seventy-eight cases of chronic myelogenous leukemia. Each dot represents an individual case. The curve is the mathematical mean of duration of efficient life. The cross is the combined mathematical mean of duration of efficient life and time after irradiation treatment was begun.

The scattering of the dots is much wider than in Chart 4, which demonstrates not only the considerable variation in the actual duration of the patient's efficiency, but also that this time is much more variable than the percentage of efficient life after irradiation. In each case the duration of useful life is in proportion to the duration of the disease. The chances for a given patient are that the later irradiation is begun after symptoms have been present about nine months, the shorter will be the time of his useful and able existence. It will be noticed that when irradiation was begun after symptoms had existed for about six months or less, the chances were not so good for a long period of efficiency as when it was commenced some three to even eighteen months later. This may suggest to some that the early institution of irradiation therapy led to shortening the patient's time of efficiency and his life. A much more plausible explanation for the relatively short duration of the cases treated within six months after the onset of symptoms is that those fated by nature to a short course have a stormy onset of their disease and thus are apt to obtain an early diagnosis. This leads to irradiation sooner than when patients have chronic myelogenous leukemia of a type that lasts longer, progresses more sluggishly, and in whom symptoms leading to diagnosis develop later than in the shorter cases. Hence diagnosis is made and irradiation begun at a more remote time. It is quite possible that therapy begun exceedingly early may affect very appreciably the duration of efficiency as well as life, particularly in those patients destined to have the disease for more than five years; but data are too scant to justify the assertion that such is the case.

The average lapse of time from the onset of symptoms to the beginning of irradiation treatment for the seventy-eight patients was 1.4 years, varying from a few months to 6.25 years. The average time of efficient life after irradiation was about 1.6 years, varying from a month and even less to 4.5 years. Among the nineteen living patients under observation, all but one are today in a very fair state of health; four, first treated between six and thirteen months after the first symptoms, have remained in very able condition between two and six and one-half years.

The statistical facts that have been given enable one to forecast the probabilities of the duration of life and the general ability of the patient with chronic myelogenous leukemia. This forecast for a given case can be made still more accurate from information not discussed here; namely, a proper interpretation of the patient's clinical state, including particularly that obtained from a detailed study of the blood. Likewise, the actual degree of the individual's efficiency and its persistence depend on not only these factors but also on the irradiation given. Even so, an inaccurate prognosis may be made; but when all the details concerning the patient and therapy are at hand, a distinctly incorrect prognosis should very seldom be made as compared with an approximately correct one.

At the present time, figures for the actual duration of chronic myelogenous leukemia suggest that the life of these patients is but little prolonged by irradiation, though this therapy makes the patient much more comfortable and useful for a longer period of time than if untreated. It is to be noted that in the last few years irradiation therapy has been given in what is believed to be, from numerous aspects, a better way than formerly, and yet by the older methods of management many of our patients received much benefit. It is, thus, possible that statistics available in the future will reveal that definite extension of life is produced by irradiation, perhaps particularly when cases destined to a long duration are first treated very early and adequate therapy properly continued.

SUMMARY

1. Of 166 patients with chronic myelogenous leukemia, seventy-eight treated by irradiation and fifty-two not so treated are known to be dead. The latter serve as a control group to the former.

2. The ratio of the percentage in each decade of life of these 166 American cases and of 247 British cases, reported by Ward, to the percentage of living persons of like age, indicates that after about 30 years of age it remains nearly constant, the ratio being at a point around 2; falling for the decade 65-74 to about 1.5, which is the same as for the decade 25-34. The ratio is highest for the ages 35-44, when the actual number of cases is greatest. Below 25, the disease is rare.

3. About 60 per cent. of cases of chronic myelogenous leukemia occur in males, and 40 per cent. in females.

4. The insidious onset of the disease makes early diagnosis difficult. On the average, 100 patients did not consult a physician until about eight months had elapsed after the first symptom appeared. The length of time between the appearance of symptoms and diagnosis was on the average 1.4 years for 148 cases.

5. Irradiation has had little effect on prolonging the life of these patients. The early institution of irradiation as yet does not promise an important increase of life expectancy. The average duration of life after the first symptom of the disease in fifty-two nonirradiated patients was 3.04 years, and in seventy-eight irradiated patients, 3.5 years. Of these 130 patients, 42 per cent. lived from two to four years, and 12 per cent. more than five and up to ten years.

6. Continued, properly administered irradiation produces symptomatic benefit, which is often marked, and offers to the patient the best guarantee of the longest possible preservation of his working capacity. As the disease progresses, efficiency decreases, in spite of continued therapy.

7. All but 5 per cent. of the seventy-eight patients were benefited sufficiently by radium or roentgen ray to remain able and useful for varying periods of time. At least 50 per cent. became temporarily symptomatically well. This is in contrast to the fact that but 6 per cent. of the fifty-two nonirradiated patients had moderate remissions.

8. The duration of efficient life as compared to the length of life after diagnosis or beginning irradiation, either early or late, shows that on the average it is at least 30 per cent. longer in irradiated patients. This percentage time of useful and able existence and the degree of efficiency are both much greater when treatment is begun before than after the middle of the disease.

9. The actual duration (average 1.6 years for seventy-eight patients) of useful life after the first irradiation is proportional to the duration of the disease.

10. The statistics given enable one to forecast the probabilities of the duration of life and the general ability of the patient with chronic myelogenous leukemia. The forecast can be made more accurately if information, not discussed here, concerning the clinical state, the blood, the metabolism and the irradiation is properly evaluated.

FURTHER STUDIES OF VISCERO-SENSORY PHENOMENA

ACUTE CHOLELITHIASIS; ACUTE NEPHROLITHIASIS *

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A review of recent medical literature shows a rapid increase in the number of instrumental aids to diagnosis and in the list of laboratory tests. There is an equally striking paucity of material dealing with the bedside examination of the patient. Tests for viscerosensory phenomena furnish a method whereby the physician may gain additional information during his first visit to the sick.

These phenomena are altered responses to various sensory tests, occurring in restricted zones on the body wall, as a result of certain internal disorders. No satisfactory explanation was found for the first reports of such phenomena. An interesting example is that of John Hunter, who noted persistent tenderness of his left arm after an attack of angina pectoris. As more data accumulated, it became evident that some fundamental mechanism governed the production of this hyperesthesia, and the theory of referred pain, as elaborated by Ross in 1888, established the basis for our present interpretation. Though the field is by no means new, work has been rapidly crystallizing within the last few years. With this advance, authors writing of viscerosensory phenomena have become more insistent and conclusive in their statements. As an example, Sir James Mackenzie, in discussing the cause of abdominal tenderness elicited during a physical examination, states that "all forms of tenderness elicited on pressure over the abdomen are due to hyperalgesia which is present within the external body wall," i. e., all abdominal tenderness due to internal disease is of a referred nature. Such assertions demand attention that they may be either disproved or accepted.

THE THEORY

The theory of viscerosensory phenomena will be referred to only sufficiently to explain an accompanying diagram, intended to make clear statements that follow. In Figure 1, the gallbladder is represented by *G B*; an autonomic fiber, *A*, is represented in synaptic relation with a sensory nerve from a skin zone, *Z*. The exact situation of this synapse is not established and therefore not designated on the sketch. The center for perception, *B R*, interprets pain arising during biliary colic as coming from the periphery or skin rather than from the viscus itself. This reference to the periphery of stimuli arising in any portion of the sensory system is similar to that which occurs in the stump of an amputated limb, where pain may be "felt in the toes" even after amputation of the leg. The sketch also makes it clear why pinching the skin in the reflexly involved zone, *Z*, is more painful than a similar intensity of pinch applied to any other portion of the skin not thus reflexly connected with a diseased viscus.

VALUE IN ABDOMINAL DIAGNOSIS

The possible value of such hyperesthetic areas in abdominal diagnosis is at once apparent. The differential diagnosis of the various colics—biliary, appendical, renal, enteral—may be exceedingly difficult, owing to the similarity of the symptoms. Pallor, vomiting, rigidity, etc., are common to all, and the differentiation, therefore, must rest largely on the one point of pain localization. Cutaneous hyperesthesia offers another guide of great value. Skin signs are frequently present when pain is not localized in character. Cutaneous hyperesthesia is an objective sign and therefore not dependent on the intelligence of the patient or on his cooperation. Skin signs frequently outlast the pain, and constitute a definite physical finding of greater value than a vague pain history. Granting that from his examination the physician must decide what organ is involved, largely by means of a triad of findings consisting of (*a*) the site of the pain, (*b*) the site of the rigidity and (*c*) the site of the hyperesthesia, it is readily recognized that the latter is at present the least understood of the triad. The increase in knowledge concerning how to search for, how to localize and how to interpret, cutaneous zones of hyperesthesia will produce greater accuracy of diagnosis.

NECESSITY FOR FURTHER WORK

Notwithstanding the large amount of data that has recently accumulated, much remains to be investigated in this field. There is a striking contrast between the enthusiastic statements of those writing on the subject, on the one hand, and the present lack of recognition of the subject in current medical literature, on the other. A weakness in the work done thus far lies in the fact that it consists largely of individual case reports. No data are available giving comparative statistics between the frequency of this sign and other recognized signs and symptoms of the various abdominal disorders, or giving the percentage of incidence of this phenomenon as determined by long serial case reviews. The motive to accumulate this type of information prompted the present series of observations, which aimed to study the following conditions with reference to the incidence and value of skin signs: (1) acute appendicitis; (2) acute cholelithiasis; (3) acute nephrolithiasis, and (4) acute salpingitis.

ACUTE APPENDICITIS

The initial report [1] gave the following conclusions, based on 119 cases of this disease:

1. All patients with acute appendicitis developed positive skin signs during the attack.
2. Following rupture or gangrene of the appendix, however, positive signs were not always present at the time of examination (15 per cent. negative).
3. In cases of suspected acute appendicitis but presenting negative skin signs—in the absence of evidence of rupture or gangrene—it was found at operation that some other disease caused the symptoms.
4. Positive skin signs were observed as frequently as any other sign or symptom of acute appendicitis.

By "positive skin signs for appendicitis" was meant hyperesthesia limited to a certain cutaneous triangle described in that article.

ACUTE BILIARY DISEASE

The present article consists of studies of biliary and renal colic. All cases from the files of the Third Surgical division of Bellevue Hospital (service of Dr. George David Stewart) discharged during 1922 and 1923 with a diagnosis of either acute cholelithiasis or

* Owing to lack of space, this article is abbreviated in THE JOURNAL by the omission of two tables. The complete article appears in the author's reprints.

* From the Third Surgical Division of Bellevue Hospital and the Department of Experimental Surgery of New York University and Bellevue Hospital Medical College.

1. Livingston, E. M.: The Skin Signs or Viscerosensory Phenomena in Acute Appendicitis, Arch. Surg. 7: 83 (July) 1923.

acute cholecystitis are presented in the report. The sensory tests were made as part of the routine examination by fifteen different physicians, and not as a matter of special investigation. By "positive skin signs for gallbladder disease," as recorded here, is meant cutaneous hyperesthesia that is present on the anterior abdominal wall, localized approximately within a 2 inch radius from the tip of the ninth costal cartilage and maximal at that point. The lower limit of the hyperesthesia does

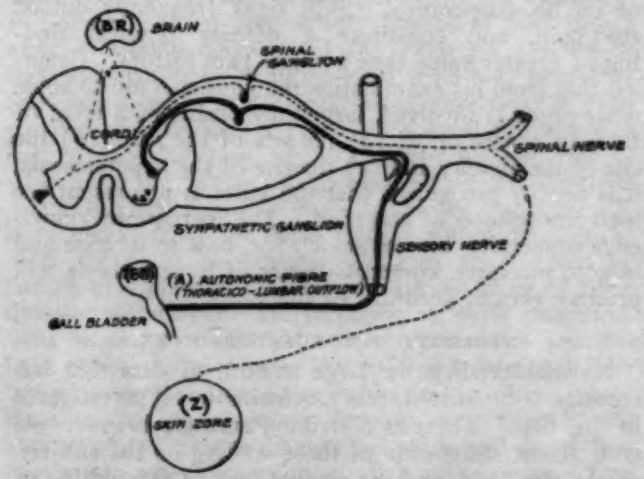

Fig. 1.—Schematic representation of the viscerosensory phenomena (skin signs) of acute cholelithiasis.

not reach to the level of the umbilicus, nor the upper limit extend upward as far as the breast, nor does it extend to the left of the midline. The method of testing consists of a vigorous twisting pinch, sufficiently strong to be unpleasant even on normal skin, and, by careful comparison of all quadrants of the abdomen, to determine areas of hyperethesia, where the same intensity of pinch becomes painful. Hot and cold test tubes may be used as an aid in delimiting more exactly the involved zone. Light scratching with a pin should not be relied on, since in only a small percentage of cases is the hyperesthesia sufficiently acute to be readily demonstrable by light grades of stimuli.

A summary of the findings shows that, in the Third Surgical Division, within the two year period stated, fifty cases were diagnosed clinically as acute cholelithiasis or acute cholecystitis. Thirty-one of these came to operation. Twenty of the thirty-one patients that were operated on had positive skin signs, two had negative skin signs, and nine had no sensory tests. In other words, *with but two exceptions, all tested patients had positive cutaneous hyperethesia.* The two with negative skin signs are exceptions that strengthen the rule. The first negative patient (Case 12, cholelithiasis, 1922) was a woman having both gallstones and kidney stones as concomitant findings, the skin signs being negative for cholelithiasis and positive for nephrolithiasis. (The case is reported in detail under the heading of nephrolithiasis.) The remaining negative patient of the series (Case 14, cholecystitis, 1923) was a woman who entered the hospital without acute colic but on account of a gradually deepening jaundice of three weeks' duration. A preoperative diagnosis was made of carcinoma of the head of the pancreas or impacted common duct stone. Operation disclosed the latter. Skin signs would not be expected in such a case on account of the long duration of the complaint, the lack of an acute colic, and the operative findings.

An analysis of the thirty-one operative cases of acute biliary disease shows further that localized skin signs are as constant and valuable as any other signs or symptoms of this disease. Characteristic pain was noted in nineteen cases, eructations of gas in nine, vomiting in twenty-four, constipation in seven, jaundice in thirteen, hematamesis in none, typical tenderness in thirteen, abdominal rigidity in nineteen, a mass in eight, positive skin signs in twenty, and positive roentgen-ray findings in nine. If these data are reliable it would seem that a dictum might be made concerning the most uniform of these signs and symptoms. It may ordinarily be concluded that a history of acute pain in the right upper abdominal quadrant associated with vomiting and abdominal rigidity constitutes a combination of symptoms pointing definitely to acute biliary disease, but that if localized cutaneous hyperesthesia is superimposed, the diagnosis is almost certain.

In biliary colic, it may be concluded that:

1. In acute cholelithiasis and acute cholecystitis, localized skin signs uniformly develop during the attack.

2. In cases with negative skin signs or with skin signs present elsewhere, the condition is not a simple acute disease of the gallbladder.

ACUTE NEPHROLITHIASIS

Facilities were not at our command to study renal colic in an analogous manner to that used in the cases of acute appendicitis and acute cholelithiasis; i. e., by a statistical review of a two to three year series of records. In reference to renal colic, however, a short series of isolated cases will be given, illustrating the occurrence and diagnostic value of skin signs in acute nephrolithiasis. To this is added a method for directly producing skin signs for demonstration or for the study of the localization of such signs in renal colic. That skin signs may be produced at will was ascertained in

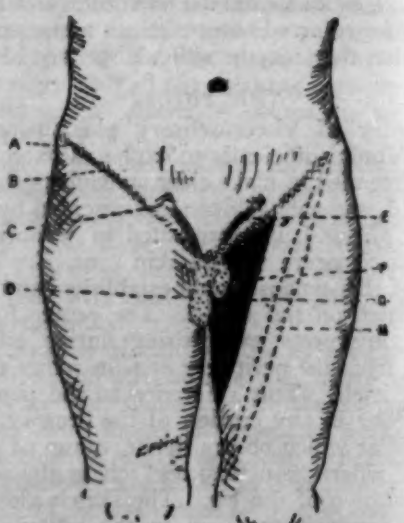

Fig. 2.—Triangular area of clinical value in determining cases of intra-urethral tension: *A*, crest of ilium; *B*, anterosuperior spine; *C*, abdominal ring; *D*, normal position of testis; *E*, spermatic cord and cremaster muscle; *F*, elevated testis; *G*, skin zone; *H*, sartorius muscle.

the following manner: A man, aged 43, was referred to Bellevue Hospital with a diagnosis of subacute appendicitis, on account of an attack of abdominal pain, associated with nausea and vomiting; tests for skin signs within the appendix triangle were negative, but an area of hyperesthesia was present on the inner side of the right thigh; a second attack of abdominal colic occurred while the patient was under hospital observa-

tion, associated this time with frequency of urination and hematuria. A pyelogram of the kidney was therefore requested. Subsequent to this examination, the localized hyperesthetic zone could not be demonstrated, owing to the presence of similar hyperesthesia on both thighs. In an attempt to explain this bilateral involvement, the question arose: Did the catheter ascending the left ureter not imitate the trauma of the stone descending the right ureter? And was not the pressure of the injected sodium bromid solution in the one ureter similar to that of the retained urine behind an impacted stone in the other? To test this hypothesis, a number of patients were examined who had been subjected to ureteral catheterization, and positive skin signs were found in several, being uniform in patients experiencing acute colic during the catheterization. Through the kindness of Dr. Clyde Collings, a series of five cases was observed at the genito-urinary clinic of New York University in which sufficient fluid was injected, during the preparation for pyelogram examinations, to give definite colic of considerable intensity. Careful tests were made prior to these injections to rule out any preexisting areas of hyperesthesia. After the injections, positive skin signs were observed in each case. The tenderness developed immediately after the colic had subsided, and persisted, with diminishing intensity, for a period of from three to five days. The triangular area of skin uniformly involved might be mapped out as follows (Fig. 2): A line beginning at the middle of Poupart's ligament and running parallel to the course of the sartorius muscle, until it reaches the inner border of the thigh, forms the outer side of the triangle; the inner border of the thigh forms the inner side of the triangle; and the inner half of Poupart's ligament forms its remaining side. The hyperesthesia conformed approximately to this area, and when extending beyond these limits did not do so over a wide space. Associated with tenderness to pinch tests were: altered responses to extremes of heat and cold; localized erythema within this triangle; marked tenderness of the testis on the side injected (the skin of the scrotum being not hyperesthetic); spasm of the cremaster muscle, with drawing up of the testis and wrinkling of the scrotum. This syndrome was found, though with varying intensity, in each patient thus injected. It therefore seems highly probable that, with a distention of a sufficient intensity within the ureter and kidney pelvis, localized skin signs develop with a uniformity as great as that observed in analogous localized areas in cases of acute appendicitis and acute cholelithiasis.

In renal colic, it may be concluded that:

1. The viscerosensory phenomena may be produced at will for study or demonstration by a sufficient distention of the ureter and kidney pelvis.

2. A triangular area of skin on the inner and upper portion of the thigh is here suggested as being of value, from a clinical standpoint, in determining cases of intraureteral tension.

A few isolated cases of acute nephrolithiasis are reported, the records giving the briefest possible outline of points pertaining to the study of skin signs.

REPORT OF CASES

CASE 1.—H. S., a man, aged 45, Italian, was referred to Bellevue Hospital, Jan. 14, 1920, with the admission diagnosis of acute appendicitis. (This case is discussed in the article.) The discharge diagnosis was ureteral calculus. This diagnosis was based on a pyelographic report of a "stone lodged in the lower third of the right ureter." The patient was discharged after refusing operative treatment.

CASE 2.—E. G., a man, aged 54, German, artist, came to the office at 11 p. m., Aug. 10, 1921, in great distress, pale, retching, and in a cold sweat. He complained of severe pain throughout the entire right side. It was most severe in the right lumbar region, and radiated to the right lower quadrant. It began suddenly, half an hour previously, as the patient was preparing for bed. He had vomited twice. There was no history of previous similar attacks. There were no urinary symptoms. Abdominal examination showed a large scrotal hernia on the right, which reduced easily. Rigidity was present in the right lower quadrant and right lumbar region. The right testis was drawn upward to the external abdominal ring, and was exquisitely tender. There was no localized hyperesthesia or tenderness over the abdomen. There was tenderness on fist percussion over the right kidney. A triangular area of hyperesthesia was present on the upper and inner portion of the right thigh (corresponding to the triangle already described). The lightest touch in this area was painful; pinching could not be tolerated. Test tubes, "hot" elsewhere, became "painful" within this area; "cold" test tubes felt "hot" within the tender zone. A marked and persistent erythema followed the tests within the area, in marked contrast to the slight erythema present elsewhere. one-half grain (0.0325 gm.) of morphin sulphate, given in two subcutaneous injections, failed to give relief. At 1 a. m., an additional half grain (0.03 gm.) of morphin was administered and the patient put to bed in the office. The following morning the patient gave this history: At about 2 a. m. there developed an uncontrollable desire for micturition. A scant amount of urine was passed at ten minute intervals. This urine was red; a specimen was saved for examination. Shorty after 3 a. m., the pain suddenly stopped, leaving the patient exhausted. He fell asleep without difficulty. The patient was not seen again for two weeks, and at that time refused cystoscopic or roentgenographic examinations. He had had no subsequent attacks. He has been under observation for the last two years. There have been no further attacks, and no evidence of trouble within the genito-urinary tract.

TABLE 1.—*Viscerosensory Phenomena in Acute Biliary Diseases**

	Acute Cholecystitis		Acute Cholelithiasis	
Skin Signs	Patients Operated on	Patients Not Operated on	Patients Operated on	Patients Not Operated on
1922:				
Positive.....	5 (1, 5, 7, 9, 11)	2 (5, 17)	5 (5, 6, 8, 13, 14)	2 (2, 10)
Negative.....	0	2 (8, 15)	1 (12)	2 (1, 4)
Not tested...	4 (2, 12, 13, 16)	3 (4, 6, 10)	4 (3, 9, 11, 15)	1 (7)
1923:				
Positive.....	5 (1, 2, 10, 12, 20)	6 (4, 13, 15, 17, 18, 19)	5 (1, 3, 6, 7, 9)	0
Negative.....	1 (14)	5 (2, 6, 7, 9, 16)	0	1 (4)
Not tested...	1 (8)	2 (8, 11)	0	3 (2, 5, 18)

Relative frequency of positive and negative skin signs, combined diseases, 1922 and 1923, patients operated on:
Positive skin signs ——————
Negative skin signs —
Not tested ——————

* Study of skin signs in acute biliary diseases as recorded on the charts of the Third Surgical Division of Bellevue Hospital for 1922 and 1923. Figures in parentheses indicate case numbers.

CASE 3.—P. F., a man, aged 26, a native of Porto Rico, a chef, Feb. 12, 1921, at 5 p. m., was suddenly seized with an agonizing pain in the left side. The attack came on while he was at work; he became nauseated and weak, and vomited twice while being taken to his room. When seen half an hour later he was still tossing about with pain, which was described as beginning in the back and left side and shooting into the left testis. He gave a history of a similar attack six months before and associated with frequency of micturition and hematuria. On examination, the abdomen was normal, aside from rigidity of the left lumbar and lower abdominal muscles, which were also tender to deep pressure. No abdominal cutaneous hyperesthesia was present. On the inner side of the left thigh was an area of acute hyperesthesia

extending slightly beyond the limits of the kidney triangle previously described. The entire syndrome of elevated left testis, painful left testis, localized erythema and altered responses to heat and cold were also present. The attack subsided after two injections of morphin sulphate of a half grain each. No hematuria followed the attack. The cutaneous signs were present with undiminished intensity the following day. No facilities were at hand for cystoscopic or roentgen-ray examinations (the patient was seen at a Florida winter resort), and no further treatment was required. The patient was under observation for one month following this attack, but presented no symptoms other than a dull pain in the left side.

CASE 4.—M. R., a woman, aged 31, admitted to Bellevue Hospital, Aug. 3, 1922, complained chiefly of severe pains in the right side of the abdomen, cramps in the upper abdomen, and pains in both knees. The patient arrived in New York from Belgium three weeks before, and had been troubled continuously, since leaving the boat, with abdominal cramps. July 31 (three days before) she was taken with a sudden severe attack of colic while at work and had to go to bed. She described severe pains in the right lower quadrant radiating to the back; also cramplike epigastric pains. Two days before, she began vomiting and had had several attacks since then associated with the colicky pain. She was unable to retain food. There had been no bowel movement in five days. There was no history of jaundice or previous similar attacks. On examination, August 3, the patient was in great distress, retching and vomiting repeatedly. The abdomen was rigid throughout. There was diffuse tenderness over the right side; fist percussion over the right kidney elicited marked tenderness; the left side was normal. The temperature was 99.2. The leukocyte count was 14,000; polymorphonuclears, 80 per cent. There was no abdominal hyperesthesia, but a zone was present on the right thigh extending to the middle of the inner side of the thigh and below Poupart's ligament; the outer border was parallel to the sartorius muscle, but an inch or more internal to that muscle. The working diagnosis of acute nephrolithiasis was made, and after an injection of morphin the symptoms disappeared. The following day the temperature was normal and the patient comfortable. A cystoscopic examination was negative. A roentgenogram taken with the ureteral catheters in place showed the presence of calcareous bodies, which were described as being outside the kidney pelvis and apparently in the region of the gallbladder. August 9, the patient was operated on with a diagnosis of probable cholelithiasis. The colon was fixed to the gallbladder by numerous adhesions. The gallbladder was not greatly thickened. The stomach and duodenum were normal. The right kidney was enlarged, and two stones were felt near the upper pole. These stones seemed to be in the kidney substance rather than within the kidney pelvis. During the following two weeks the patient had repeated attacks of abdominal pain, frequency of micturition and evidence of cystitis. At discharge, August 27, the patient was cured of gallbladder disease, was informed as to the presence of kidney stones, and was advised to return to the same ward on the occurrence of any further trouble.

CASE 5.—F. L., a man, aged 44, a book binder, was in the best of health when, Dec. 18, 1923, he became suddenly ill with agonizing pain in the right side. The pain radiated from the back to the end of the penis. It began while the patient was at the toilet; he felt too faint to stand erect, and subsequently vomited. He was aided to his bedroom, and a physician was called. A hypodermic injection was administered, which failed to relieve the pain. This acute pain continued for eight hours, during the latter part of the time being associated with an incessant desire to urinate. A very small amount of urine was passed, and the patient did not notice its color. When seen three days later, he presented the following points of interest in connection with the study of skin signs: At the beginning of the examination he was asked to pinch the abdomen and thighs at various points. This he did, volunteering the information that it was "painful" and "felt different" on the inner side of the right thigh. He outlined the limits of the "different" area, which was below Poupart's ligaments and internal to the sartorius muscle. This area was found definitely more tender to pinch tests. There was no altered response to heat or cold. A marked erythema could be produced in this area by even light touch; vigorous scratching failed to elicit an erythema at any other point which was either as intense or as persistent. The right testis was very definitely more tender than the left. The roentgen-ray report showed numerous medium sized stones in the right kidney pelvis (catheters entered both kidney pelves without meeting obstruction). This case illustrates the persistence of viscerosensory phenomena after the disappearance of pain and rigidity.

GENERAL CONCLUSIONS

1. Acute distention within the appendix, biliary ducts and ureter uniformly produces localized cutaneous hyperesthesia.
2. Tests for this hyperesthesia should be made with the grosser forms of stimuli, and a vigorous twisting pinch is the most reliable method of examination.
3. Localized hyperesthesia, when properly correlated with the other clinical data present, is of great importance in the differential diagnosis of diseased states of these tubular structures.
4. No physical examination for the diagnosis of acute diseases of the appendix, biliary ducts or ureter is complete without tests for localized cutaneous hyperesthesia.

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THE VALUE OF SODIUM CHLORID IN THE TREATMENT OF DUODENAL INTOXICATION

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Clinically, the toxemia that occurs in partial or complete duodenal or upper intestinal obstruction is striking, both because of the severity and because of the peculiar character of the syndrome. This syndrome was first described by Newman,[1] in 1861, and soon afterward by Kussmaul.[2] Mayo-Robson,[3] in 1898, mentioned eleven cases of gastric tetany. Ten of the patients died. Another patient, his own (at first suspected of having strychnin poisoning on account of the convulsions), completely recovered following gastro-enterostomy. Cunningham,[4] in 1904, reported a typical case of gastric tetany in which the patient recovered after gastro-enterostomy had been performed.

MacCallum[5] and his co-workers were probably the first to show, by direct experimental evidence, that there was a decrease in the plasma chlorids and an increase in the carbon dioxid carrying capacity of the blood in cases of obstruction in the upper intestinal tract. They demonstrated slight improvement following the administration of hydrochloric acid. They also produced symptoms of tetany by the intravenous injection of sodium bicarbonate. McCann[6] later corroborated these results. Rodman,[7] in 1914, reported a case of gastric tetany and recommended lavage for the condition. Haden and

1. Newman, quoted by Kussmaul (Footnote 2).
2. Kussmaul, A.: Ueber die Behandlung der Magenerweiterung durch eine neue Methode mittels der Magenpumpe, Deutsch. Arch. f. klin. Med. **6**: 455-499, 1869.
3. Mayo-Robson, A. W.: Tetany and Tetanoid Spasms Associated with Gastric Dilatation Treated Surgically, Lancet **2**: 1392-1394, 1898.
4. Cunningham, J. H.: Gastric Dilatation and Tetany, Ann. Surg. **39**: 527-553, 1904.
5. MacCallum, W. B.; Lintz, H.; Vermilye, H. N.; Leggett, T. H., and Boas, E.: The Effect of Pyloric Obstruction in Relation to Gastric Tetany, Bull. Johns Hopkins Hosp. **31**: 1-7 (Jan.) 1920.
6. McCann, W. S.: A Study of the Carbon Dioxid Combining Power of the Blood Plasma in Experimental Tetany, J. Biol. Chem. **35**: 553-563 (Sept.) 1918.
7. Rodman, W. L.: Gastric Tetany, J. A. M. A. **62**: 390-391 (Feb. 21) 1914.

Orr [8] have shown by experiments on dogs and rabbits that in obstruction of the upper intestinal tract there is a marked lowering of the blood chlorids, an increase in the blood urea, and an increase in the carbon dioxid carrying capacity of the blood. Koehler [9] has recently shown that in acute fevers there is an increase in the carbon dioxid combining power. Murray [10] believes that the loss of hydrochloric acid by vomiting causes a disturbance in the acid base equilibrium. He reported five cases in which relief was obtained by gastro-enterostomy. Brown, Eusterman, Hartman and Rowntree [11] have emphasized the renal involvement of patients suffering from duodenal intoxication, and the occurrence of shock, and have outlined treatment for the condition preoperatively and postoperatively. They reported ten cases; five of the patients died, and at necropsy they found nephrosis characterized by acute degeneration, changes in the tubular epithelium, or a diffuse nephritis.

I shall present here cases of duodenal intoxication observed in the Mayo Clinic during the last year. Attention is directed to the clinical syndrome, the changes in blood chemistry findings, and the treatment.

REPORT OF CASES

CASE 1.—A man, aged 38, registered, Dec. 25, 1922, with symptoms of pyloric obstruction. He had been jaundiced six months before, and the gallbladder had been drained by his local surgeon. The jaundice disappeared. After four months, he had a second operation to close a biliary fistula, and because of symptoms of gastric obstruction. A gastro-enterostomy was also made, and, to relieve the common duct obstruction, a rubber tube was placed in the gallbladder and another in the duodenum, the tubes being connected outside the abdomen by means of a glass tube. Following this operation, the patient gained 25 pounds (11 kg.); the jaundice disappeared, and there was very little pain. Two weeks before coming to the clinic, he began having symptoms of pyloric obstruction, characterized by vomiting of food ingested from twelve to fifteen hours before.

On examination, the patient was found to be free from pain, emaciated and considerably dehydrated. There was poor pupillary reaction. The sclera was not jaundiced. The systolic blood pressure was 115; the diastolic, 78; the pulse rate was 90, and the temperature normal. One of the rubber tubes on the outside of the abdomen, connected by a glass tube, apparently reached into the gallbladder and the other into the duodenum or jejunum, through which bile was passing freely. A firm, smooth mass could be felt in the right upper quadrant, apparently the liver. No ascites could be demonstrated. The spleen could not be felt. Rectal examination was negative. The knee jerks were diminished. The Babinski signs were negative. The urine was acid in reaction, and showed albumin 2 and a few pus cells. The leukocytes numbered 14,000; the erythrocytes, 4,720,000, and the hemoglobin 90 per cent. (Haldane-Palmer method). The Wassermann reaction was faintly positive. The carbon dioxid combining power of the blood plasma was 101 per cent. by volume.

During the first twenty-four hours in the hospital, the patient vomited two or three times, in all about 800 c.c. The vomitus was of a watery consistency, with a total acidity of 36 and a free acidity of 17. The blood Wassermann reaction was negative. Thirty-six hours after admission, the patient had a convulsion, which was characterized by clenching of the hands, with the thumbs turned slightly in; twitching of the facial muscles, particularly on the right side, and clonic contractions of the whole musculature. He was rigid for a few seconds; then the muscular contractions relaxed, and he became comatose. There was still slight twitching of the facial muscles on the right side. The pulse was very weak, and respirations were shallow. His color remained good. The Chvostek and Trousseau signs were negative. The comatose state lasted for about fifteen minutes; the patient then became restless, moved considerably, and talked irrationally most of the time. There was no history of previous attacks. During the following twenty-four hours, the patient had three similar attacks, which occurred at intervals of from five to six hours and were preceded by drowsiness. After the second attack, 10 c.c. of dilute hydrochloric acid and 800 c.c. of water were given by rectum.

After the third attack of convulsions, 1,000 c.c. of 0.9 per cent. sodium chlorid solution was given subcutaneously. After the fourth convulsion, 800 c.c. of Ringer's solution, containing an additional gram of calcium chlorid, was given intravenously, followed by a solution of sodium chlorid and glucose by rectum. The patient had no more convulsions. Five hours after the last attack he was slightly improved and was rational. Eight hours after the injection of Ringer's solution and the sodium chlorid, the blood carbon dioxid combining power showed a marked increase from 123 to 150. The blood chlorids rose from 0.375 to 0.425 per cent. Examination of the urine at this time revealed albumin 3, with occasional granular and hyaline casts. The phenolsulphonephthalein excretion was 30 per cent. in seven hours. Table 1 illustrates the fluctuation of the plasma chlorids and the carbon dioxid combining power; it also illustrates the effect of sodium chlorid, in that there was a marked lowering of the carbon dioxid and a distinct increase in the plasma chlorids following its administration. With the exception of the one intravenous administration, all medications were administered through the enterostomy tube. Although the process causing the obstruction in this case was probably malignant, the fact that the patient had gained weight when fed through the enterostomy tube, and that fluoroscopic examination of the stomach was negative, made it seem wise to perform a gastro-enterostomy under local and gas anesthesia. At operation, a small amount of amber colored fluid was present in the abdomen. The liver was considerably enlarged and contained numerous metastatic nodules. The stomach and intestines were adherent in a firm mass. Relief of the condition was impossible, and further surgical procedures were not attempted. The patient did very well for a few days following the operation. The third day after operation, he quite suddenly developed a high fever, and became weak, stuporous and drowsy. There was still twitching of the facial muscles on the right side. Sixteen grams of sodium chlorid was given through an enterostomy tube, and soon after, the blood carbon dioxid combining power and chlorids were determined. The carbon dioxid combining power was 72. The chlorids were 710 mg. for each 100 c.c. of blood plasma. The patient gradually grew weaker, became comatose, and died on the third day following operation.

TABLE 1.—*Findings in Case 1*

Date	Urea, Mg. for Each 100 C.c.	Carbon Dioxid, per Cent. by Volume	Chlorids, Mg. for Each 100 C.c.	Albumin	Reaction of Urine	Sediment* Hyaline Casts	Sediment* Granular Casts	Phenolsulphonephthalein, per Cent. Intravenously
12/26/22	..	...	...	2	Acid	1	1	..
12/27/22	88	101	...	2	Acid	2	1	30
12/28/22	..	123	375	1	Acid	...	...	..
12/29/22	62	150	425	...	.....	...	...	..
12/30/22	..	138	410	...	Acid	...	...	..
12/31/22	38	110	425	...	Acid	...	...	..
1/ 2/23	54	103	300	1	Alkaline	...	...	..
1/ 3/23	..	144	415	...	.....	...	...	..
1/ 4/23	..	133	450	...	.....	...	...	..
1/ 6/23	..	108	600	...	Acid	...	...	..
1/ 8/23	..	122	550	...	.....	...	...	..
1/ 9/23	..	120	600	...	.....	...	...	..
1/10/23	..	126	575	1	Alkaline	1	...	50
1/11/23 a.m.	..	130	550	1	Acid	...	...	..
1/11/23 p.m.	..	118	500	...	.....	...	...	..
1/12/23	..	113	672	1	.....	...	...	..
1/15/23	..	71	710	1	.....	...	...	..

* Occasional erythrocytes in sediment Dec. 26, 1922.

8. Haden, R. L., and Orr, T. G.: Upper Intestinal Tract Obstruction, J. Missouri M. A. **20**: 185-189 (June) 1923.
9. Koehler, A. E.: Acid-Base Equilibrium, Arch. Int. Med. **31**: 590-605 (April) 1923.
10. Murray, H. A., Jr.: The Chemical Pathology of Pyloric Occlusion in Relation to Tetany, Arch. Surg. **7**: 166-196 (July) 1923.
11. Brown, G. E.; Eusterman, G. B.; Hartman, H. R., and Rowntree, L. G.: Toxic Nephritis in Pyloric and Duodenal Obstruction; Renal Insufficiency Complicating Gastric Tetany, Arch. Int. Med. **32**: 425-455 (Sept.) 1923.

Necropsy revealed cancer of the pancreas with peritoneal carcinomatosis and metastasis to the liver; obstruction of the papilla of the duct of Vater and the duodenal lumen; dilatation of the common duct and the pancreatic duct; and an old healed duodenal ulcer (Fig. 1).

The character of the attacks and the blood chemistry findings in this case clearly indicate gastric tetany. It

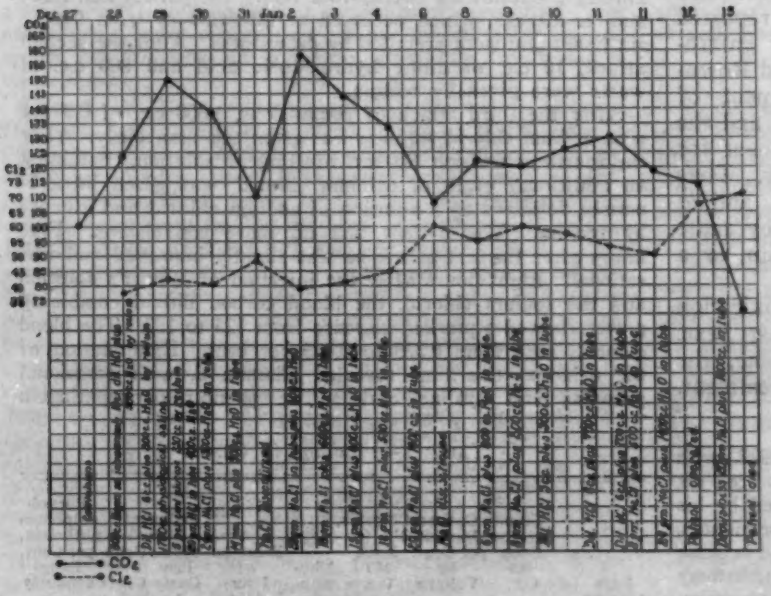

Fig. 1 (Case 1).—Blood changes following administration of sodium chlorid.

will be noted that the patient was markedly improved and there were no convulsive attacks after the administration of chlorids. When the chlorids were discontinued, the carbon dioxid combining power rose rapidly, and the chlorids decreased considerably, and pretetanic symptoms developed. Hydrochloric acid in sufficiently large doses kept the carbon dioxid combining power and the plasma chlorids nearly constant; but, because of the smaller doses allowed, it was not as efficient as sodium chlorid in controlling the tetanic symptoms.

CASE 2.—A girl, aged 17, admitted to the clinic, Jan. 10, 1923, complained of symptoms characteristic of duodenal ulcer. Roentgen-ray examination disclosed duodenal ulcer with obstruction 3. The patient was emaciated, and appeared dehydrated. The Chvostek and Trousseau signs were positive. Examination of the urine was negative. Chemical examination of the blood revealed carbon dioxid carrying capacity of 103 per cent. by volume. The plasma chlorid was not estimated. The urine was negative on two examinations. Fifteen grams of sodium chlorid and 250 c.c. of a 5 per cent. solution of glucose were given by proctoclysis. The following day, the carbon dioxid content was 89 per cent. by volume; the plasma chlorids were 590 mg. for each 100 c.c. of plasma. The patient showed marked clinical improvement. A gastro-enterostomy resulted in uneventful recovery.

This patient gave a typical history of duodenal ulcer, with obstruction of three years' duration. The symptoms progressed slowly. Her appearance was quite characteristic of alkalosis and dehydration; her face was flushed, and had a pinched expression. Fifteen hours after the administration of chlorid, the patient remarked that she felt better than she had in three years.

CASE 3.—A man, aged 73, admitted to the clinic, May 24, 1923, complained of "stomach trouble" of several years' duration. Examination revealed a duodenal ulcer with considerable retention. The patient had vomited from two to four times a day for the last six weeks, totaling from 800 to 1,200 c.c. each day. He was prepared for operation in the routine manner, by being put on a liquid retention diet, and lavage twice daily; from 800 to 1,500 c.c. was obtained each day. Table 2 gives the blood chemistry estimations and the result of treatment.

May 28, 12 gm. of sodium chlorid was administered subcutaneously, and 8 gm. of sodium chlorid in 250 c.c. of a 5 per cent. solution of glucose by proctoclysis. May 29, 8 gm. of sodium chlorid in 500 c.c. of 5 per cent. glucose solution was administered by proctoclysis. May 30, exploration disclosed a duodenal ulcer, and almost complete obstruction. A posterior gastro-enterostomy was made and 9 gm. of sodium chlorid administered subcutaneously. Progress was uneventful until June 2, when the patient developed pneumonia, which proved fatal three days later.

This patient's condition was apparently greatly improved by medical treatment preceding operation. His recovery would undoubtedly have been uneventful had the pulmonary condition not developed, a condition that is constantly guarded against postoperatively, especially in patients of this age. An interesting feature in this case is the urinary findings. The first analysis showed the usual alkalosis and an occasional pus cell, but was otherwise negative. When the pulmonary condition developed, the findings in the urine were those which usually develop with pneumonia. The urea remained high, whereas, in other cases of alkalosis, the high urea and pathologic findings in the urine subsided after the administration of chlorids.

CASE 4.—A man, aged 51, came to the clinic, May 5, 1923, complaining of "stomach trouble." On examination a duodenal ulcer, with considerable gastric retention, was found.

May 7, posterior gastro-enterostomy, and appendectomy were performed. The patient's condition was favorable until the sixth day, when he began vomiting, and this continued for three days. His face became flushed, and he appeared dehydrated. May 16, he became semicomatose. A second operation was performed. The blood chemistry determinations at this time are shown in Table 3. It was found that a loop of jejunum had become angulated, and a small piece of fat of the transverse mesocolon had become adherent to the mesentery of the jejunum, just opposite the site of the gastro-enterostomy. The patient did not vomit following the second

TABLE 2.—*Findings in Case 2*

Date	Urea, Mg. for Each 100 C.c.	Creatinin, Mg. for Each 100 C.c.	Carbon Dioxid, per Cent. by Volume	Chlorids, Mg. for Each 100 C.c.	Albumin	Reaction of Urine	Sediment: Hyaline Casts	Sediment: Granular Casts
5/26/23	..	....	....	....	...	Alkaline	...	...
5/28/23	..	....	82.0	450	...	Alkaline	...	...
5/29/23	48	....	79.0	....	...	.....	...	...
5/30/23	56	3.0	68.0	605	...	.....	...	...
5/31/23	..	....	....	....	2	.....	3	2
6/ 1/23	84	2.0	....	....	1	.....	0	0
6/ 4/23	78	1.5	....	615	...	.....	...	...

TABLE 3.—*Findings in Case 4*

Date	Urea, Mg. for Each 100 C.c.	Carbon Dioxid, per Cent. by Volume	Chlorids, Mg. for Each 100 C.c.	Albumin	Reaction of Urine
5/ 8/23	...	...	...	...	Acid
5/14/23	...	...	...	...	Alkaline
5/16/23	...	101	495	2	Alkaline
5/17/23	120	93	575	1	Alkaline
5/18/23	108	...	...	...	Alkaline
5/19/23	106	77	680	...	Alkaline
5/20/23	86	69	609	...	Alkaline
5/21/23	40	...	...	...	Acid

operation. The changes in the blood, as shown in Table 3, however, were too marked to be accounted for entirely by the relief from the obstruction. Examination of the urine during the period when the carbon dioxid carrying capacity was high and the chlorids low showed albumin 2, and an occasional hyaline cast. May 21, the urinalysis was negative, and the remainder of the convalescence was uneventful (Fig. 2).

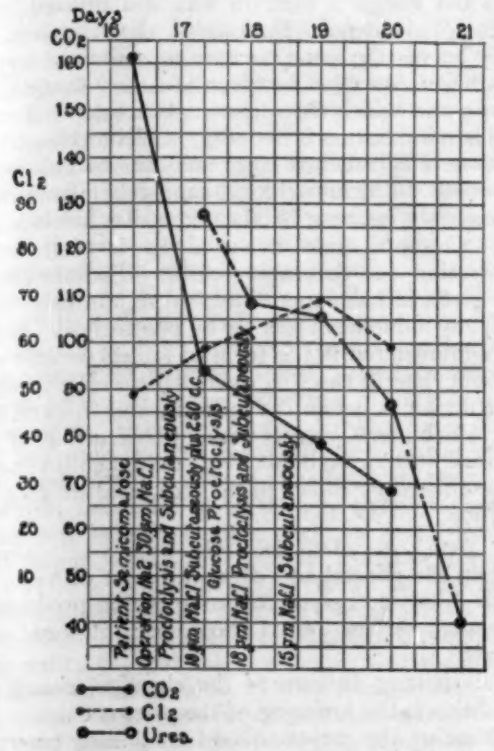

Fig. 2 (Case 4).—Blood changes following administration of sodium chlorid.

This patient is a rather typical (unwelcome) example of what occasionally happens following a gastro-enterostomy. It is well known that the mortality in these cases is very high, even though a second operation corrects the mechanical obstruction. A second operation, plus the poor condition of the patient, often makes the outcome unsatisfactory and grave. In this case, considerable chlorid was given before and immediately after the second operation. In twenty-four hours, the patient had no pain, and felt very well except for undue hunger. It is interesting to note that, aside from alkalinity, the urine revealed nothing of consequence until the high alkalosis occurred, at which time there were hyaline and granular casts. This condition subsided immediately following the administration of chlorid, and the blood chemistry subsequently returned to normal.

CASE 5.—A man, aged 69, came to the clinic, June 26, 1923, complaining of vomiting and epigastric pain of three months' duration; he was markedly emaciated and dehydrated. A roentgenogram revealed an inoperable cancer of the pyloric end of the stomach, with obstruction 3. The patient was admitted to the hospital, July 4, in a semicomatose condition. The results of the chemical examinations of the blood are shown in Table 4.

The alkalosis was apparent in this case from the fact that the patient had vomited three or four times daily for the last three months, and on examination showed a positive Trousseau sign. The chemical examination of the blood, as shown in Table 4, left no doubt as to the condition that was the result of the obstruction. July 5, 10 gm. of sodium chlorid was given subcutaneously. An attempt to administer sodium chlorid by proctoclysis was unsuccessful. After some difficulty, a Rehfuss tube was passed through the stomach into the duodenum, and 20 gm. of sodium chlorid was administered by the rectal drip method in 500 c.c. of water. July 6, 15 gm. of sodium chlorid was administered by the Rehfuss tube and the rectal drip method. July 7, 15 gm. of sodium chlorid was administered in 500 c.c. of a 5 per cent. glucose solution by proctoclysis. The patient improved markedly, and was able to take small amounts of liquid nourishment frequently, without vomiting. He refused a palliative operation, and was dismissed from observation, July 9.

This case is a striking example of alkalosis. Had the condition been operable, that is, a benign lesion obstructing the pylorus, the patient could have been taken care of surgically with a minimum of risk. However, no surgical procedure would have been attempted with the patient in a semicomatose condition. But by the administration of chlorids, in thirty-six hours the patient was greatly improved clinically, and a very remarkable change, approaching normal, of the blood chemistry had occurred.

CASE 6.—A man, aged 39, was admitted to the clinic, June 26, 1923, complaining of a burning pain in the epigastrium. He had vomited from one to three times daily for the last three weeks. On examination, a duodenal ulcer and marked dilatation of the stomach were found. The patient was put on the routine preliminary preparation for operation. During lavage he had attacks similar to tetany. Chemical examinations of the blood revealed the findings shown in Table 5.

June 29, 15 gm. of sodium chlorid was administered subcutaneously and by proctoclysis. June 30, exploration and a posterior gastro-enterostomy were performed. Two days after the operation, the patient's condition was entirely satisfactory. July 1, the patient vomited three times, a total of 800 c.c. July 2, 12 gm. of sodium chlorid in 250 c.c. of glucose was given by proctoclysis. July 3, the patient vomited four times, a total of 900 c.c. Nine grams of sodium chlorid was given subcutaneously, and 8 gm. was given in 300 c.c. of 5 per cent. glucose solution by proctoclysis. July 4, the patient vomited once, 350 c.c. Eight grams of sodium chlorid was given subcutaneously. The patient ceased vomiting, and the remainder of the recovery was uneventful.

TABLE 4.—*Findings in Case 5*

Date	Urea, Mg. for Each 100 C.c.	Creatinin, Mg. for Each 100 C.c.	Carbon Dioxid, per Cent. by Volume	Chlorids, Mg. for Each 100 C.c.	Sediment: Hyaline Casts	Sediment: Granular Casts
6/28/23	...	....	.....	...	2	...
7/ 5/23	200	....	.....	...	4	1
7/ 6/23	102	....	108.0	450	...	...
7/ 7/23	94	2.6	71.8	525	...	...
7/ 9/23	76	....	73.2	536	...	...

TABLE 5.—*Findings in Case 6*

Date	Urea, Mg. for Each 100 C.c.	Carbon Dioxid, per Cent. by Volume	Chlorids, Mg. for Each 100 C.c.	Albumin	Reaction of Urine	Sediment, Hyaline Casts
6/26/23	....	..	...	...	Acid	...
6/28/23	....	..	...	1	Acid	2
6/29/23	....	78	450	...	.....	...
6/30/23	30.0	..	570	...	.....	...
7/ 2/23	....	83	585	1	Acid	...
7/ 3/23	54.0	82	600	...	.....	...
7/ 4/23	....	..	...	...	Acid	...
7/ 6/23	42.0	74	615	...	.....	...
7/ 7/23	....	..	...	...	Acid	...

This case is interesting from the standpoint of preoperative preparation and postoperative treatment. The blood chemistry findings in the beginning were not so striking, but clinically the patient was in a pretetanic state. After the operation, when the patient began vomiting, the blood changes showed quite definitely an early alkalosis.

COMMENT

It has long been recognized that in cases of obstruction of the upper intestinal tract the mechanical features do not explain the entire clinical syndrome. There are numerous conditions which require much more extensive operative procedures than intestinal obstruction, and which consequently cause more shock; yet the mortality in cases of high intestinal obstruction, if present only a few hours, equals or exceeds that of almost any other acute surgical condition. The recent development of methods by which the various chemical components of the blood may be estimated has thrown considerable light on this subject.

There are few, if any, conditions in which there is such an invariable change in certain chemical elements of the blood as are found in obstruction of the upper intestinal tract, or duodenal intoxication. Patients suffering from this condition present a very striking syndrome. Usually they are much dehydrated by loss of fluid from vomiting, and exhibit red facies, thready pulse, lowered blood pressure, asthenia, high hemoglobin, and in the more severe cases, the convulsions of gastric tetany.

Chemical examination of the blood, in cases of duodenal intoxication, gastric tetany or obstruction of the upper intestinal tract reveals (1) marked decrease in the plasma chlorids; (2) increase in the carbon dioxid carrying capacity of the blood, and (3) increase in the blood urea. The rôle played by plasma chlorids in this toxemia and their fluctuation is most striking, and is such a constant finding that it is used as an index in the treatment of such cases.

Very often there is a definite relation between the carbon dioxid carrying capacity of the blood and the plasma chlorids; namely, the administration of sodium chlorids causes a decrease in the carbon dioxid combining power and an increase in the plasma chlorid content. In some of the very severe cases, however, there is only a moderately elevated carbon dioxid combining power, with a very marked decrease in plasma chlorids. In other severe cases, there may be, at first, after the administration of sodium chlorid, a rise in the carbon dioxid and also a rise in the chlorids with a distinct improvement of the patient.

The action of the chlorid metabolism in this condition is debated; whether a toxic protein substance forms in the intestine which unites with the chlorids and causes chlorid depletion, or whether the entire loss is due to vomiting, remains unsettled. It is quite likely that the explanation includes both. The renal involvement associated with duodenal intoxication appears after the clinical symptoms and blood chemistry changes are present. The renal condition is manifested by the pathologic findings in the urine, namely, granular and hyaline casts, albumin and occasionally red blood cells. It is of great interest that, following the administration of a sufficient amount of sodium chlorid, the urine often becomes completely normal in from twelve to thirty-six hours. The degree of renal involvement and the chances for improvement or recovery necessarily depend on the severity of the toxemia and its early treatment.

Patients suffering from intestinal occlusion, resulting in duodenal toxemia, are obviously in much better condition to undergo operation if preliminary treatment with chlorids is instituted. Postoperative vomiting, which often follows gastro-enterostomy, is diminished or abated by the administration of sodium chlorid. Patients with functional stasis and vomiting, if there is no obstruction, improve remarkably or recover following this treatment.

Brown, Eusterman, Hartman and Rowntree used calcium chlorid and dilute hydrochloric acid and large amounts of fluids in the form of physiologic sodium chlorid solution intravenously, subcutaneously and by rectum, and Ringer's solution was also utilized in the treatment of duodenal intoxication. Hydrochloric acid probably serves the same purpose as sodium chlorid in this condition, but must be given in a very dilute form; in instances in which there is complete intestinal occlusion, its administration is not easy. Calcium chlorid also seems quite efficient, but large amounts of chlorid are often needed. Calcium chlorid cannot be administered subcutaneously because of the extensive necrosis that results. Caution must be used in its intravenous administration for the same reason. Sodium chlorid may be given in large quantities, subcutaneously, intravenously, by a duodenal tube or by proctoclysis. It may also be administered in the form of tablets covered with phenyl salicylate in cases of duodenal toxemia in which the obstruction is below the pylorus, and in functional cases in which there is stasis without obstruction. There is therefore little or no doubt that sodium chlorid seems to be the chlorid of choice in the treatment of duodenal intoxication.

CONCLUSIONS

1. From the clinical and chemical point of view, the condition discussed here is the same as that produced in experimental obstruction of the upper intestinal tract in animals.

2. The striking feature of the chemical changes in this condition is the lowering of the plasma chlorids and the increase of the carbon dioxid combining power of the blood.

3. The effect of treatment with chlorids is remarkable, both in clinical and in chemical changes.

4. The mortality in the untreated cases, compared with that in the treated cases, is conclusive evidence that, when operation is necessary to relieve the mechanical abnormality, preoperative treatment lowers the risk to a minimum. The treatment also decreases or abolishes the similar toxemia often seen in patients with functional stasis without mechanical obstruction.

A Diabetic Patient and His Dog.—Every diabetic child should have his dog. A dog is a diabetic's thoughtful friend. A dog never says to a diabetic, "You are thin," never speaks about his diet, never tempts him to break it and to eat a little more, never refers to the delicacies he himself has eaten or the good bones he expects to eat; in fact, never implies in public or in private that he knows his master has diabetes. A diabetic is never embarrassed by his dog. How often he wishes his friends were as considerate. His dog shows the diabetic how to rest and sleep at odd moments, shows him how to exercise and play and indicates the value of sunshine, and sets him a good example by cleaning his paws every night. A dog is cheerful. Friends of diabetics sometimes wish that diabetics would take lessons from a dog. From experiments on a dog, Minkowski found that diabetes originated in the pancreas. From experiments on a dog, Allen learned that undereating helped and overeating harmed diabetics. From experiments on a dog, Banting and Best discovered insulin. When I see a little boy and his dog, and their devotion to one another, I am reminded of the remaining 999,999 diabetics and future diabetics in the United States who are alive today or will be alive in the future, enjoying better health and happiness, because a few dogs, through the instrumentality of multitudes of scientific workers, have revolutionized the treatment of diabetes.—Elliott P. Joslin.

PRODUCTION OF ACIDOPHILUS MILK ON A LARGE SCALE FOR GENERAL USE*

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The term "acidophilus milk" was first applied by Rettger and Cheplin[1] to a pure culture of *Bacillus acidophilus* in milk. Autoclaved milk was used by these authors, and has been used by almost all other workers since the original description of their method. Although where adequate facilities are available, it is possible to produce a limited quantity of acidophilus milk in this way, it would not be practical to produce a large amount. Even if it were, it would necessarily be quite expensive as compared with other forms of milk.

The cost of the acidophilus milk produced in this way and the difficulty of obtaining it may not be prohibitive when it is to be used for therapeutic purposes in the treatment of definite disease, especially during the present period of enthusiastic use of this new therapeutic agent. However, if the drinking of acidophilus milk accomplishes the transformation of the intestinal flora, and greatly reduces or entirely prevents the growth of putrefactive bacteria in the intestinal canal, as we now believe it does, there is great need for a much larger supply than is now available for general use. If it is beneficial as a remedy for diseases and conditions caused by harmful intestinal bacteria, it should be still more useful to maintain healthful conditions and to prevent the development of these diseases and abnormal conditions. Prevention of such diseases and conditions is more important than cure.

It must remain for the future to determine whether the apparent therapeutic value of maintaining an acidophilus intestinal flora, indicated by the many favorable reports published during the last two or three years, is real or not. If it is, then acidophilus milk probably should be a part of the diet of the healthy, as well as of those having diseases or conditions due to a harmful intestinal bacterial flora.

Acidophilus milk is a pleasant, nutritious food beverage, equal and, in fact, superior to almost all other forms of "buttermilk." A glassful or more with one or more of the daily meals is the ideal way for it to be taken. For this purpose, it should be available at moderate cost and obtainable without special effort. It should be produced and supplied by the dairy in the same way that other forms of milk are supplied. Investigation has shown that this is possible, and my purpose here is to describe a practical method of production that meets the need. The method differs from the methods of producing acidophilus milk previously used chiefly in that the milk is sterilized by interval heating at a temperature considerably lower than when it is sterilized in the autoclave, and the machinery and facilities that are already available in any well equipped dairy are used. It is believed that this method will take the place of the method of production formerly used, which has proved quite burdensome on the bacteriologic laboratories of physicians and others.

Sterilizing milk by superheating it in the autoclave impairs the taste and probably lessens its nutritive value. What is probably still more important, it is quite likely that such autoclaved milk may itself impair the digestion and heatlh when it is consumed in large quantities over long periods of time. It is all right for therapeutic purposes, for relatively short periods of time; but, for the purpose of maintaining an acidophilus flora for prevention, it would be kept up indefinitely.

When made and supplied by dairies according to the method described, acidophilus milk should not cost any more than other kinds of "buttermilk." In fact, acidophilus milk of high quality, made by this method, is now being delivered to the hospitals and to the homes of consumers in New Orleans for thirteen cents a quart.

When produced, handled and distributed in a commercial way, there is necessarily likely to be present a few other bacteria, introduced in the handling and bottling, but these are the same kind of bacteria that are present in hundreds of times greater numbers in other milk and milk supplies and are negligible so far as the present purpose is concerned. Stained preparations of such milk appear to be a pure culture of *Bacillus acidophilus,* but plate cultures usually show a few other bacteria.

METHOD

1. The temperature of a tank of skim milk is raised to from 190 to 195 F.
2. It is held at about this temperature for one hour.
3. It is cooled down to about 98 F.
4. It is held at about this temperature for three or four hours.
5. The temperature is again brought to from 190 to 195 F.
6. It is held at about this temperature for one hour.
7. It is cooled down to 98 F.
8. It is inoculated with a pure culture of *Bacillus acidophilus* in milk, about 1 quart per hundred gallons of milk.
9. It is held at about 98 F. until the milk is firmly coagulated and the desired acidity has developed.
10. It is broken up by means of the mechanical agitator.
11. It is cooled.
12. It is bottled.
13. It is distributed, or stored in the refrigerator room.

ELABORATION ON SOME OF THE STEPS IN THE METHOD

1. There are several different makes of vertical pasteurizing tanks made by manufacturers of dairy machinery which are suitable. The cover of the tank should be fastened down and kept down during the whole process. A small opening through which steam can escape is necessary. It should be possible to heat the milk without scorching.

2. Slight variation of the temperature up or down from that stated does no harm.

4. If the temperature goes 5 or 10 degrees below 98 F. during this stage, no harm results.

8. A pure culture of *Bacillus acidophilus* in milk is necessary for the inoculum. It must be a strain that grows well in milk. It is produced by inoculating quart bottles of milk sterilized in the autoclave, with 10 c.c. of fresh culture, and incubating at 98 F. for twenty-four hours.

In such inoculum there are from 700,000,000 to 1,000,000,000 bacilli per cubic centimeter, and it is good for a period of four or five days, after which time the number of viable bacilli rapidly diminishes. Its keeping is not improved by refrigeration.

* From the department of experimental medicine, Tulane University of Louisiana School of Medicine.

1. Rettger, L. F., and Cheplin, H. A.: Transformation of the Intestinal Flora, New Haven, Yale University Press, 1921.

The inoculum can be produced in the bacteriologic laboratory of the plant, if facilities and a competent bacteriologist are at hand. Otherwise, it could be supplied from a central laboratory in the district. In fact, it could be shipped considerable distances if it is not practical to produce or obtain reliable material locally. In one experiment, it was shipped a distance of more than 600 miles, and the quality of the acidophilus milk produced was equal to that produced in New Orleans.

9. The temperature should not be allowed to fall more than 5 degrees below the specified temperature of 98 F., during the incubation period. Insulated tanks and those located in small, closed rooms are most satisfactory on this account.

The milk should not be agitated during the incubation until after coagulation has taken place and the desired acidity has developed. This requires a longer or shorter period of time, according to the amount of inoculum used. When from 0.25 to 0.5 per cent. of inoculum is used, it usually takes from fifteen to twenty hours.

The longer incubation is continued, the higher the acidity developed. Different individuals and different trades prefer different degrees of acidity. Producers may regulate their product to suit their preference.

10. Acidophilus milk breaks up well into a good, smooth product. Much wheying off or coarse, tough coagulum means faulty methods and a very poor product.

13. Cooling and storing the milk in a refrigerated room prevents the acidity from increasing, but does not hold up the number of the desirable *B. acidophilus* organisms any more than if the milk were kept at room temperature.

Acidophilus milk can be kept in cold storage for three or four days without any considerable change, but ideally it should be used within one or two days.

HEPATIC ANAPHYLATOXIN

THE HEPATIC INTERNAL SECRETION IN ANAPHYLAXIS

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The liver is the first organ for which a function of internal secretion was predicted by Claude Bernard. Our knowledge of hepatic physiology is so scanty, however, that modern textbooks on endocrinology rarely mention the liver as a possible site of hormone formation. We have recently obtained experimental evidence that, at least under certain pathologic conditions, the liver forms or liberates internal chemical products markedly influencing the physiologic activity of other organs. We believe that these internal hepatic products are of clinical significance, and that they play a rôle in the action of therapeutic agents.

Cannon,[1] Asher[2] and others have obtained experimental evidence that internal hepatic products influence the activity of the myocardium. Our evidence of an internal hepatic secretion is based on a study of the effects of hepatic exclusion on the reactions of the urinary bladder in canine anaphylaxis.

1. Cannon, W. B., and Griffith, F. R.: The Cardio-Accelerator Agent Produced by Hepatic Stimulation, Am. J. Physiol. **59**: 480, 1922.
2. Asher, L.: The Influence of the Liver on the Chemical Regulation of the Heart, Proc. Soc. Exper. Biol. & Med. **21**: 193, 1924.

ANAPHYLACTIC REACTION IN THE URINARY BLADDER

In typical anaphylactic shock in intact dogs, the arterial blood pressure falls precipitously to about 35 mm. of mercury by the end of forty-five seconds, gradually decreasing to about 25 mm. by the end of ninety seconds. Recovery usually begins about the twelfth minute. The arterial blood pressure is usually restored to normal in from sixty to ninety minutes.

During the first forty-five to seventy-five seconds of this reaction, the urinary bladder shows no recordable change in intracystic pressure.[3] The intracystic pressure then gradually increases, usually reaching a maximum of from 25 to 50 mm. of mercury by the end of two and a half minutes. Recovery immediately sets in. The intracystic pressure is usually restored to normal by the end of the fifth to the seventh minute.

Bladder reactions apparently identical with those of anaphylactic shock are produced by the intravenous injection of histamin.

EFFECTS OF EVISCERATION AND LIVER EXCLUSION

The liver exclusions were made by a modification of the simplified Eck-fistula technic proposed by Dale and Laidlaw.[4] By this modification, the portal vein is joined to the resected abdominal vena cava by means of a Crile transfusion cannula. Control tests have shown that the unavoidable ligation of the abdominal vena cava by this method has no demonstrable effect on the anaphylactic response of the urinary bladder.

In eviscerated and in dehepatized dogs, the typical anaphylactic fall in arterial blood pressure does not take place. This does not mean that the extrahepatic canine tissues are not hypersensitive to the foreign protein.[5] It merely indicates that, with the usual doses of foreign protein, the primary reactions in the extrahepatic tissues are not such as demonstrably to lower arterial blood pressure. The exact mechanism by means of which the liver produces the typical anaphylactic fall in arterial blood pressure has not been determined.[6]

In dehepatized and in eviscerated dogs, injected with the usual doses of foreign protein, the typical anaphylactic contraction of the urinary bladder does not take place. The tone of the bladder remains constant throughout the test (five minutes). From this we conclude that, in typical canine anaphylactic shock, the contraction of the urinary bladder is secondary to a preliminary hepatic reaction.

In contrast with this finding, dehepatization and evisceration do not abolish the typical bladder reaction to histamin.

The anaphylactic bladder contraction is not secondary to the anaphylactic fall in arterial blood pressure. Even the extreme reduction of arterial blood pressure produced by rapidly fatal exsanguination, or the local anemia from ligation of the abdominal aorta, does not throw the urinary bladder into contraction. Reduced blood pressure has even the opposite effect, slightly decreasing the bladder tone.

3. Manwaring, W. H.; Hosepian, V. M.; Enright, J. R., and Porter, Dorothy, F.: Reactions of the Urinary Bladder in Canine Anaphylaxis, Proc. Soc. Exper. Biol. & Med. **22**: 284, 1924.
4. Dale, H. H., and Laidlaw, P. P.: A Simple Method of Short-Circuiting the Portal Circulation, J. Physiol. **52**: 351 (March) 1919.
5. Manwaring, W. H.; Chilcote, R. C., and Hosepian, V. M.: Anaphylactic Reactions in Isolated Canine Organs, J. Immunol. **8**: 233 (May) 1923.
6. A summary of the theories is given in J. Immunol. **8**: 47 (Jan.) 1923; J. Path. & Bacteriol. **27**: 51, 1924.

We therefore believe that the typical anaphylactic bladder contraction is due to chemical products, explosively formed or liberated by the anaphylactic liver, products having a histamin-like action on the urinary bladder.

Suggestive evidence in support of this theory is obtained by blood-free perfusions of anaphylactic livers. If the liver of a dog sensitized to horse serum is washed free from blood by a preliminary perfusion with Locke's solution, and is then perfused with Locke's solution containing 1 per cent. horse serum, the perfusate becomes suddenly opalescent, even milky. The physiologic properties of these anaphylactic perfusates will be reported later.

SUMMARY AND CONCLUSIONS

During the first two minutes of typical canine anaphylactic shock, the urinary bladder is thrown into sharp contraction. This typical bladder contraction does not take place in dehepatized dogs. We believe that this bladder contraction is due to histamin-like products (hepatic anaphylatoxins) explosively formed or liberated by the anaphylactic liver. Suggestive evidence in support of this view is furnished by perfusion experiments.

SIMPLICITY OF TECHNIC

A PLEA FOR MORE RATIONALISM AND LESS ROUTINE

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From the surgical point of view, one of the most important lessons of the World War was simplification of technic. All overseas medical officers who operated in the zone of the armies, particularly during the months of June, July and August, 1918, when the Medical Corps was so wofully behind in its authorized quota of officers, enlisted men, nurses and supplies, will agree that we had to "carry on" with a dearth of surgical equipment which would have driven the head surgical nurse of a civilian hospital to distraction. Sufficient time has now elapsed to prove that both the immediate and the end results of war surgery were, in the main, excellent, in spite of the handicaps under which primary operative procedures had to be carried out.

The fact that a wounded soldier is a disabled athlete and not a sick man, whereas civil surgery is mainly directed toward the control of pathologic conditions which have, to a varying extent, decreased the patient's power of reaction and antibody formation, made it necessary to proceed slowly and tentatively in the application of war-acquired technic to civilians. The results obtained now warrant the statement that our simplified technic is uniformly beneficial to the patient and a source of economy to the hospital that allows it to be carried out.

We think there is crying need for a modification of surgical ritual, for elimination of unnecessary maneuvers and procedures. Traditions, many of them inherited from the early listerian period, are too often followed as a routine in our best hospitals, and the waste of labor, time and money in the handling of surgical patients is to be deplored. With all but the heavily endowed institutions laboring under the burden of ever-increasing overhead expenses, is it not time for us to find out what is necessary and what is superfluous in surgery?

Let us, for example, study the contrast between a routine laparotomy in a civilian hospital, and one performed near the battle line. In the former institution there is a lavish expenditure of sterile towels and sheets; "over there," one was sometimes lucky to have two sterile towels for a laparotomy, with a third one on which to place the instruments. Only in periods of relative calm, between battles, did advance hospitals boast of laparotomy sheets for all major operations. "Over here," in any up-to-date hospital, the intern removes and throws away the sterile dressings that were placed on the patient the night before; he next places two sterile towels above and below the operative area before swabbing the latter with benzin. Separate swabs are used for the umbilicus, center and circumference of the area. Iodin is next applied, and immediately removed with alcohol, six swabs being used and discarded in this procedure. The two original towels have not been touched, but the surgical nurse removes them, and four new ones are placed at right angles and retained by skin clips. Two sterile sheets come next, draped over the towels, and, finally, the laparotomy sheet itself. Can there be any valid surgical excuse for the six towels and two sheets? What the wastage in laundry bills alone must amount to in the course of a year can be readily figured out by any hospital superintendent.

The abuse of laparotomy pads is even more serious; not only do we, in civil surgery, waste them uselessly, but unnecessary trauma to visceral peritoneum inevitably results when from four to ten laparotomy pads contuse the bowel in every direction. War surgery taught us that, with few exceptions, one or possibly two laparotomy sponges, properly spread out and retained in place by means of large retractors, gave the surgeon a perfectly clear field to work in and tended to minimize postoperative gas pains. The position of the patient has much to do with the ease with which adequate exposure of the operative field can be obtained and maintained without the abuse of laparotomy pads. The extreme Trendelenburg position in pelvic surgery, and the reverse Trendelenburg position with kidney rack elevation, are positions that ought to be in common use; both mechanically remove obstructing viscera from the operative field.

Leaving for the moment questions that pertain largely to hospital economics, let us now consider the patient himself, from the time a diagnosis is made of his complaint to his discharge from the hospital.

So much has been written on the psychology of fear that one hesitates even to mention the subject. There is, however, no doubt that worry, anxiety and fear assumed great importance in the production or accentuation of shock and retardation of recovery from war wounds. There are still among us colleagues who, through an exaggerated commercial instinct, magnify the seriousness of their patient's malady. The surgeon who says to the husband: "Your wife won't live six hours if an operation is not performed," is more unscientific than the dear old family practitioner of forty years ago who said: "If you had only called me a day sooner, I would have saved you from typhoid fever." The latter, in his day, probably believed what he said, while the former must know that, by misinterpreting the facts, he has filled the sickroom with an atmosphere of apprehension which unfavorably influences the patient. It is not wise to deny the possibility of danger in any surgical operation; on the other hand, it is worth while to inculcate hope in the minds of both patient and relatives. Not infrequently, the surgeon is obliged to

remind the nurse on the case that "silence is golden"; some of them will discuss similar cases in the hospital, where convalescence has been prolonged or even had a fatal outcome. Such information is unnecessary and pernicious.

PREOPERATIVE TREATMENT

There is at present a healthy tendency toward omitting the sacrosanct purge with which we used to disturb our patient's sleep and comfort, but the old tradition dies hard. A recent inquiry regarding routine preoperative methods in a number of standard hospitals brought out the fact that calomel and castor oil, cascara and saline cathartics, or castor oil alone were ordered by the intern or attending surgeon as a matter of course, regardless of the location of the pathologic process or of the type of surgical intervention contemplated. Why any one should elect to create an acute enteritis or dehydrate a patient as a preliminary to operation is a hard question to answer. There is no proof of the actual existence of intestinal autointoxication. That purging induces gas formation, harmful peristalsis, dehydration and disturbed sleep is beyond question. That the stomach should be devoid of solid food or the lower colon and rectum emptied preoperatively is readily granted; all other parts of the gastro-intestinal tract can be "milked" free of their contents if included in the field of operation.

As secretions and excretions are both notoriously lessened by operative procedures, not only should water be freely allowed, but the patient should be urged to drink copiously up to within an hour of the anesthetic. When gastro-intestinal paresis inhibits absorption, physiologic sodium chlorid solution should be given intravenously as a preliminary to operation.

With the exception of obscure cases necessitating complicated laboratory tests, it is preferable not to prolong unduly the interval between admission to the hospital and the operative ordeal. The ideal routine should be admission one afternoon with operation early the following morning. This gives the house staff ample time for routine analyses and surgical preparation of the operative field. The patient's mind is constantly occupied and interested by the series of attentions given him by intern, laboratory technician and nurses; overanxious relatives can be barred from the sickroom, and lights are turned out for the night before imagination has had much chance to run riot.

The surgical preparation of the field of operation should be restricted to shaving, washing—not scrubbing—the skin with soap and water, and rubbing the skin with ether or benzene soaked sponges, followed by the application of a dry sterile dressing. There is no rational excuse for introducing antiseptic solutions into the vagina until just prior to the operation.

If patient and relatives have confidence in the surgeon and the nurse is gifted with the requisite amount of tact and cheerfulness, the night before operation slips by without disturbing the all essential spirit of hope, which constitutes such an important part of any operative procedure. It is utterly futile to discuss means and methods of acquiring and maintaining moral ascendency over one's patients; the personal equation varies with each case; but a sturdy consciousness on the part of the surgeon that his diagnosis is the correct one and that his contemplated operation will remedy or alleviate the diseased condition, plus ability to impart his equanimity to the patient, is a preoperative sine qua non.

The routine hypodermic of one-sixth or one-fourth grain of morphin, with $\frac{1}{150}$ grain of atropin, thirty minutes before the anesthetic, has thoroughly proved its usefulness and should be omitted only on proof of definite contraindication.

The art of anesthesia cannot be said to have been advanced as the result of the World War. We still prefer nitrous oxid-oxygen gas if a real expert is available, or drop ether if we are limited to the average anesthetizer; there is nothing more annoying than an indifferently or poorly given nitrous oxid-oxygen anesthetic.

In the absence of definite contraindications to a general anesthetic, we are not yet inclined to prefer paravertebral or splanchnic nerve blocking. A recent report of well authenticated fatalities arising from the use of local anesthesia will cause the thoughtful surgeon to view the 1 : 40,000 fatality record of ether narcosis with added respect.

THE OPERATION ITSELF

We still apply tincture of iodin to the skin, and remove most of it immediately with alcohol; it may do some good.

One laparatomy sheet, its center accurately secured to the skin by means of four clips, should give ample protection against contamination. It is doubtful whether the clamping of sterile towels to the skin, immediately after its incision, plays any rôle in aseptic healing; we had to do without them during the war and have done without them ever since.

Simplicity in operative technic should be the rule. We had to perform our major war-wound operations with a minimum of instruments because the available supply was at times extremely limited, and it did not take long to realize that two 8-inch forceps could be made to do the work of twelve, with the added advantage of minimizing tissue traumatism, because ligation or suturing went hand in hand with the progress of the operation, and there was no pulling and mauling of tissues crushed by cluttering forceps.

One ordinary length of catgut was found to be ample for three or four ligatures; there is no reason why this time-saving and economic habit should not be maintained in civil life.

We learned, as never before to an equal extent, to rely on the defensive and regenerative forces of Nature, to avoid breaking down defensive barriers, to drain sparingly and, when drainage was inevitable, never to remove and replace a drainage tube in the abdominal cavity for fear of pressure necrosis and fistula formation. Drainage down to but not into serous cavities became axiomatic.

The use of ether in the treatment of infections has persisted since 1912, when Morestin and Souligoux of Paris first published their reports on its use in peritonitis. Ether lavage was carefully eliminated from rules of procedure in our Medical Corps instructions in 1917, but perusal of final reports from every division that saw active fighting in France disclosed the fact that, following the advice of our French colleagues, practically every hospital in the zone of the armies made use of ether in the treatment of infections. Its use is based on the twofold advantage that ether possesses; namely: 1. It volatilizes at 98 F., thus acting as a vapor and following the well known law of diffusibility of gases, and not as a liquid. 2. Experimentally and clinically, it has been shown to stimulate phagocytosis, thus enhancing Nature's defensive reactions. Ether is not primarily a bactericide, and should not be used with this object in view. I have been a stanch advocate of ether lavage in both gynecologic and general surgical operations since

1913, and have seen no reason for changing my views on the subject. Ether lavage in the treatment of infections came out of the war with an untarnished reputation.

POSTOPERATIVE CARE

Again, simplicity should be the rule. If the surgeon, blindly relying on the sacrosanct multiple draperies with which we still surround the operative field, traumatizes the intestinal tract while operating on abdominal or pelvic organs, paresis and gas pains will inevitably follow. Repeated trials in the past have never been able to convince me that postoperative therapy directed toward increasing peristalsis was logical or desirable. The overzealous anxiety on the part of nurses and interns to have all patients promptly evacuate their colons postoperatively is comparable to the obstetric novice who institutes manual expression of the placenta when there is no clinical indication for so doing. Intestines traumatized by operative manipulations need physiologic rest. On the other hand, the belief that a colonic tube, properly inserted, will remove gas that the patient is too weak to expel unaided has remained. As for the rectal drip, the conviction grows that it tends to produce reverse peristalsis of the descending colon, with gas retention. Preference is now given to subcutaneous or intravenous saline injections in the presence of dehydration.

Warm fluids by mouth, the patient should have as soon as he is able to swallow. Emesis is usually no contraindication to this routine method; it is much easier on the patient to vomit fluids than to retch on an empty stomach; anybody who has ever been really seasick will agree with this statement. Just as there is no logical reason for preoperative starvation of patients, so is there no argument against a reasonably prompt return to a normal diet after operation.

Dressings, when indicated, should be done by the "hands off" method, using dressing forceps instead of fingers.

The best results during the war were obtained by early passive massage of even joint wounds; so in civil surgery will convalescence be shortened by early massage, passive movements and insistence on a minimum of bedridden days. Only blind tradition keeps a patient who has undergone vaginal hysterectomy in bed after the third day, or one who has had a clean laparotomy, after the skin stitches have been removed.

CONCLUSIONS

1. Operating-room ceremonial is in need of readjustment. Nurses and interns—and some surgeons—are obsessed with the belief that the preparation of the field of operation, carried out with a ritual that makes a Greek Church high mass look simple by comparison, will in some mysterious way prevent postoperative shock and intestinal paresis.

2. In the observance of this ritual there is an enormous wastage of towels, sheets, suture material and solutions.

3. Gentleness in handling tissues is an art that needs more emphasis than it is, at present, given in our teaching and writing.

4. Preoperative starvation, purging and frightening are potent factors in the causation of postoperative shock, intestinal paresis and protracted convalescence.

5. The simplest surgical technic, based on accurate anatomic knowledge of the tissues involved, will give the best results.

30 North Michigan Avenue.

THE SURGICAL TREATMENT OF ADHERENT PERICARDIUM *

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AND
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Although twenty-two years have elapsed since Brauer [1] first suggested the operation of cardiolysis for the relief of adherent pericardium, and almost twenty years since its value was clearly demonstrated,[2] Bourne,[3] in a recent review of the literature, has been able to compile only twenty-three cases in which this operation had been performed. To this surprisingly small number, Bourne adds two; of the twenty-five cases thus accumulated, only five were obtained from the United States. Apparently there have been a few cases reported in Europe, which were omitted from Bourne's series, for some reason that he has not made clear; no mention is made of the cases of Treupel,[4] Soyesima,[5] von Jagic,[6] Thorburn,[7] Dunant and Turrettini,[8] the two thesis cases of Ensgraber and Schwarzenauer,[9] and the three reported by von Beck [10] (doubtless excluded because they were patients with extensive pleural as well as pericardial adhesions). We are unable, however, to find any reports from this country in addition to the five that he includes in his paper, these being the cases of Dunn and Summers,[11] Summers,[12] Hirschfelder [13] and Smith.[14]

We feel that the operation of cardiolysis constitutes a very valuable therapeutic measure, and one that should be kept in mind by internists and surgeons. Summers [15] says: "Cardiolysis has found no favor in America; why this is so is incomprehensible to me, because the operation is based upon good mechanical principles, is not difficult of execution, neither has it a high mortality. The danger of the procedure is so inconsiderable in proportion to the good to be expected, that every physician should familiarize himself with the diagnosis of the conditions calling for the operation, and every surgeon should learn the technic." It is probably true that many internists are unfamiliar with the diagnosis of adherent pericardium, and that many surgeons are unacquainted with the technic of Brauer's operation—indeed, it is not difficult to understand the comparative neglect of a measure that has received so little discussion—yet it is probably also true that many patients have been operated on and the cases never reported. If the records of

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7. Thorburn, W.: Cardiolysis in Heart Disease, Brit. M. J. **1**: 10 (Jan. 1) 1910.
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9. Ensgraber and Schwarzenauer, cited by Lecene, P.: Arch. d. mal. du cœur **2**: 673, 1909.
10. Von Beck, B.: Zur Cardiolysis bei chronischer adhäsiver Mediastino-Pericarditis postpleuritica, Arch. f. Chir. **73**: 958, 1904.
11. Dunn, A. D., and Summers, J. E.: Observations on a Case of Mediastinopericarditis Treated by Cardiolysis, Am. J. M. Sc. **145**: 74, 1913.
12. Summers, J. E.: Cardiolysis: A Further Report with Notes of an Additional Case, Surg., Gynec. & Obst. **25**: 92 (July) 1917.
13. Hirschfelder: Diseases of the Heart and Aorta, Ed. 3, Philadelphia, J. B. Lippincott Company, p. 618.
14. Smith, E. S.: Cardiolysis for Chronic Mediastinopericarditis, M. Clin. N. Am. **4**: 835 (Nov.) 1920.
15. Summers, J. E.: Am. J. Surg. **27**: 230 (June) 1913.

these patients could be made available by publication, it would do much to stimulate more careful search for adherent pericardium as a cause of heart failure, and to remind internists of the possibility of surgical relief.

It is with the hope of stimulating such reports that we add this case to those already on record, as an example of the relief that may be afforded by the operation:

REPORT OF CASE

History.—M. P., an American housewife, aged 26, entered the New Haven Dispensary, May 2, 1923, complaining of dyspnea and palpitation. These symptoms had been present for about four years, gradually increasing in severity; she had been forced to limit her activities more and more, until, finally, the exertion of sweeping a small room left her dyspneic and exhausted. For the two weeks prior to entrance, she had been unable to walk up a single flight of stairs. The contractions of the heart had become more forcible, and were sufficient to shake the entire body; on many occasions, her friends had asked why she trembled when sitting quietly. For some months, she had been unable to lie on her left side, as the body was lifted from the bed at each beat of the heart. There had been very little pain over the precordium, and no edema of the ankles or feet. Except for the pounding of the heart, she felt quite comfortable while sitting quietly.

At the age of 12, she had persistent "growing pains" in the calves of both legs for several months, but no joint involvement. At 17, she had acute rheumatic fever, with typical involvement of the knees and ankles, which kept her confined to bed for five months. During the first few days of this illness, she suffered with acute pain over the heart; at the conclusion of the rheumatic fever, she was informed by her physicians that the heart had been seriously damaged. At 24, following an acute upper respiratory infection, she had another attack of rheumatic fever, similar to the first but less severe, lasting about three weeks. The past history was otherwise unimportant, except for possible mild scarlet fever in childhood. The family and marital histories presented no facts of significance.

Examination.—The patient was rather frail; she was underdeveloped and well nourished, and could lie comfortably on one pillow. There was no objective dyspnea and no cyanosis. The body was shaken constantly by the beating of the heart. The thorax was quite asymmetrical, the left anterior chest showing a distinct prominence, beginning at the left sternal margin and extending to the left midclavicular line, involving the second to the fifth rib. There was conspicuous heaving of the entire left chest and epigastrium, synchronous with cardiac systole. On palpation, the whole precordium could be felt to move with the heart beat; there was systolic retraction and diastolic rebound, giving rise to a definite "diastolic shock." The point of maximal intensity of the impulse did not shift with change in the position of the patient. Inspiratory filling of the neck veins could not be demonstrated, and pulsus paradoxus was absent. The cardiac impulse could be felt in the sixth interspace in the anterior axillary line, 13 cm. from the midsternum; the right border of percussion dulness in the fourth right interspace was 3 cm. from the median line. Retromanubrial dulness measured 7.5 cm. in the first and second spaces. There was distinct retraction of the ribs and interspaces in the left back and posterior axilla. On auscultation, the sounds were regular except for occasional premature beats; the first apical sound was quite loud, and was followed by a blowing systolic murmur. The second sound was normal, and was followed by a faint third sound. There was a faint, early diastolic murmur audible along the left sternal border. There was no accentuation of the pulmonic or aortic second sounds. The blood pressure was 98 systolic, 52 diastolic. The pulse was not collapsing in quality, and the usual peripheral signs of aortic insufficiency were absent.

The lungs were clear throughout to percussion and auscultation. The abdomen was soft and flat, without masses or tenderness. The liver and spleen could not be felt. There was no evidence of free fluid in the abdomen, and no edema of the extremities or lower back. The physical examination otherwise was negative.

A roentgenogram of the heart, taken with the tube 2 meters from the patient ("6-foot plate"), showed the measurements to be: transverse diameter of the heart, 17 cm.; transverse diameter of chest, 23.5 cm.; transverse diameter of the great vessels, 8 cm. The roentgenologist reported that the heart was markedly enlarged in all diameters, resembling somewhat the water-bottle heart of pericardial effusion; the cardiodiaphragmatic angle was not obliterated; fluoroscopic examination showed a rolling, wavelike pulsation of the entire left heart. An electrocardiogram showed a dominant sinus rhythm, with slight widening and notching of the Q-R-S complexes, and occasional ventricular premature beats. No attempt was made to determine the presence or absence of a shift in the electrical axis of the heart on movement of the patient's body.

Operation and Result.—The patient entered the New Haven Hospital, May 14, and two days later the operation of cardiolysis was performed under local and block procain anesthesia, a 0.5 per cent. solution being employed. The line of incision was first infiltrated, and each intercostal nerve then blocked, posterior to the area of rib to be excised.

A curvilinear incision was made, extending from over the sternum at the level of the second rib to the sixth rib, in the anterior axillary line on the left. The pectoral fascia and the origins of the pectoralis major muscle in this area were divided and, together with the skin flap and the breast, retracted upward and outward. An excellent exposure of the operative field was thus obtained.

Subperiosteal resections of the fourth, fifth and sixth ribs and their cartilages on the left, from just beyond the midclavicular line up to the sternum, were carried out. On removal of these structures, the parietal pleura and pericardium retracted markedly, and bounded backward and forward, over a distance of 2 or 3 cm., with each excursion of the heart. Three centimeters of the periosteum over the fifth and sixth ribs was removed, in order to prevent any possible complete regeneration of the bone. The wound was closed in layers with interrupted silk.

At no time during the procedure did the patient suffer any pain or show any accentuation of the cardiac embarrassment. Blood pressure readings were made every three minutes throughout the operation; at no time did the pressure vary more than 10 mm. from the reading before operation. Electrocardiograms were also taken every few moments throughout the operation, and showed no changes, except moderate variations in rate and occasional premature beats of ventricular origin.

Recovery was rapid and uneventful, and the wound healed by first intention. On the third day after operation, the patient found that she could lie on her left side without discomfort other than the slight pain from the incision. Premature beats, which had been rather troublesome, disappeared within ten days, and have never recurred. There was but slight change in the size and shape of the heart, as shown in a roentgenogram taken a few days after operation, and subsequent electrocardiograms showed no change from earlier records.

Almost eleven months have elapsed since the operation, and the patient has been seen at frequent intervals during that period. The improvement in her symptoms has been little short of marvelous. Whereas, formerly she could not walk upstairs, could do none of her housework, and could walk only a very short distance on a level road, she now does all of her housework without discomfort, goes up and down stairs freely, and walks considerable distances whenever she desires. Her color has improved, her appetite is normal, she sleeps on either side without discomfort, and she has gained several pounds in weight.

COMMENT

The extremely favorable result in this case is partly due, of course, to the fact that the operation was performed at a comparatively early stage, before the late symptoms of adherent pericardium (ascites, etc.) had made their appearance; also to the probability that the heart failure was due largely to the mechanical embarrassment rather than to severe rheumatic myocarditis.

Excellent results may be expected, however, even in patients with advanced heart failure; of the twenty-five patients whose cases were reviewed by Bourne,[3] there was improvement in twenty-one, with marked improvement in seventeen.

From the technical standpoint, the operative procedure is a simple one. Local infiltration and block anesthesia is certainly the anesthetic of choice, and, provided the intercostal nerves are blocked, the operation should be painless. The curvilinear incision, as described, is preferable to the horseshoe flap previously employed, as it gives adequate exposure without any danger of necrosis in the skin flap. If the subperiosteal resection of the rib is carried out with care, there should be no penetration of the pleura or of the adjacent structures. It is not neecssary, and is, indeed, reprehensible, to attempt to separate the pericardial layers. The operation is satisfactorily completed when the ribs and cartilages have been removed, as any complete regeneration of bone from the periosteal layer is not to be anticipated.

SUMMARY

The case here reported illustrates the relief that the operation of cardiolysis (Bauer) may afford to patients with adherent pericardium and heart failure. This appears to be the sixth case reported in this country. It is hoped that other observers who have records of similar operations will make them available by publication, so that the real value of the operation may be emphasized.

A SIMPLE METHOD OF PRESCRIBING DIABETIC DIETS*

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All the so-called simple methods that have thus far been suggested as aids in prescribing modern diabetic diets require the use of a bewildering array of complicated mathematical formulas. The general practitioner, to whose lot must fall the treatment of the vast majority of patients with diabetes, will not use formulas. He finds it difficult even to translate the values for carbohydrate, protein and fat in these diets into the menus for three meals a day. And yet, the newer methods of treating diabetes (either with or without insulin) demand that each case be treated differently, that the amount of glucose burning ability still remaining in each diabetic patient be determined as accurately as possible, and that, in each instance, the diet prescribed be designed to meet the particular need of that individual. This becomes even more important whenever insulin is to be used.

Table 1 has therefore been devised for the general practitioner in medicine, to assist him to prescribe accurate diabetic diets without the use of mathematical formulas. With its aid, the physician should be able to prescribe well balanced diets of known food value and immediately write out the menus for three meals a day with the accuracy of a trained dietitian.

In preparing this table, we have modified the excellent one of Joslin so as to make it conform to the present day needs of the high fat low, protein diets for patients with diabetes. The diets have been planned in accordance with the modern principles laid down by Woodyatt, Shaffer, Newburgh and Marsh and Wilder. They therefore preserve a proper antiketogenic balance. They contain a constant minimum amount of protein and a moderately large amount of fat.

The carbohydrate foods are in one group (Columns 5 to 14), and the protein and fat in another (Columns 15 to 20). This makes it possible to increase the carbohydrate foods in each succeeding test diet, whereas the quantities of protein and fat remain practically constant. The fat is reduced in the higher diets only in order to keep the total food values below the needs of the individual, and so maintain a moderate undernutrition during the test period.

The twelve diets given in Table 1 are called test diets, for they are designed to be used only during the first week or two, in order to eliminate the patient's glycosuria, reduce his blood sugar to a more normal level, and then test his maximum glucose burning ability. After this has been accomplished, the diet is increased in accordance with rules which will subsequently be given, this final, more adequate diet being called the permanent maintenance diet.

For mildly affected patients who are not in acidosis, a preliminary fast for several days before beginning the test diets is extremely valuable. Starvation rapidly reduces the sugar content of the blood and tissues; it reduces protein combustion; it reduces the total rate of metabolism, and, as a result of these three phenomena, it tends to reduce the hypothetic strain on the sugar burning mechanism of the body. It thereby often permits the body to recover a little of the sugar-bearing ability which it had lost.

If the patient comes under observation with marked glycosuria but with little or no acetonuria, it is our practice to starve him for two days. During these two days he receives foods of only negligible food value, such as water, coffee, tea, broth, thrice-cooked vegetables (or, if these are not available, the 1 to 3 per cent. vegetables), cellu-flour bran wafers and agar jelly. A small amount of butter and cream are allowed in order to make the foods more palatable. A glycosuria that persists even after the fast indicates the necessity for the use of insulin.

If the urine has become free of sugar before the end of the preliminary forty-eight hour fast, and little or no acetone has appeared, the case may be considered of only moderate severity. The rapidity with which the urine becomes free of sugar indicates (1) that the body is capable of consuming all the glucose derived from the protein and fat metabolism, and (2) that, in addition, it is burning glucose that had accumulated in excess in the blood, liver and other tissues. The absence of acetone indicates that the amount of glucose being burned is sufficient to secure complete combustion of the fats. Judging by these two factors, one can then with confidence skip the first three test diets and begin with Diet 4, which contains 30 gm. of carbohydrate. If the patient weighs less than 120 pounds (55 kg.) or more than 140 pounds (65 kg.), all the figures for Diet 4 must be appropriately corrected according to the corrections listed at the foot of the table.[1]

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* Because of the limitations in space, it was necessary to omit a supplementary list of the foods and substitutes that may be employed in making up these diets, together with the appropriate estimated amounts of each food. This list will be included in the reprints, which can be obtained on application to the authors.

1. It is to be noted that the corrections at the foot of the table are not strictly proportional to the differences in body weight. The undernutrition is purposely made more intense in the obese and less in the emaciated.

On the following day, Diet 5 is given and the diet increased daily thereafter until glycosuria first recurs. Or, if the patient is judged to have an exceedingly mild case because of the rapidity with which the urine became sugar-free on fasting, time may be further saved by skipping alternate diets. Diet 4 should then be followed by Diets 6, 8 and 10. When there is doubt as to the severity of the disease, the alternate, odd-numbered diets should not be skipped.

On the very first day that the glycosuria recurs (or the blood sugar begins to rise), the test diets should be stopped and a twenty-four hour fast again instituted. This completes the test, and the patient is ready to be placed on his permanent maintenance diet.

HOW TO WRITE THE MENUS

In writing the menus for the patient, the main point to remember is that the food, and especially the carbohydrate food, must be distributed as equally as possible into the three meals. For example, let us presume that after the preliminary fast we wish to prescribe Diet 4, which contains carbohydrate, 30 gm.; protein, 40 gm., and fat, 120 gm., totaling 1,360 calories. The carbohydrate in this diet can best be distributed through the day by serving the orange for breakfast, and by dividing each of the vegetables between the other two meals as follows:

Diet 4. Breakfast.—Orange (100 gm.), one small, or ten sections; 2 eggs; butter (20 gm.), 1½ tablespoonfuls eaten with eggs and on cellu-flour bran wafers; coffee or tea, with 50 gm. (¼ cup) of cream.

Dinner.—Broth, 1 cup; meat, 70 gm.; vegetables (1 to 3 per cent.), 100 gm., with olive oil (1 teaspoonful) and vinegar if desired; butter (20 gm.), 1½ tablespoonfuls; coffee or tea with 50 gm. (¼ cup) of cream.

Supper.—Same as dinner, except in place of meat, one should substitute 20 gm. of cream cheese (¼ of a Neufchatel).

Coffee, tea, broth, agar jelly, cellu-flour bran biscuits and other articles of negligible food value are allowed with all diets.

HOW TO CALCULATE THE PERMANENT MAINTENANCE DIET

The permanent maintenance diet is the diet two numbers above the one on which the glycosuria first reappeared. But it is necessary to increase the protein allowance of this diet by one half and the fat allowance by one fourth, in order to supply an adequate permanent protein allowance (1 gm. for each kilogram of body weight) and a sufficient number of calories to prevent undue loss in weight.

For example, if glycosuria first recurred on Diet 9, the permanent maintenance diet should be Diet 7 in which, however, the protein is increased by one half and the fat by one fourth. The permanent maintenance diet will then be carbohydrate, 60 gm.; protein, 60 gm.; fat, 140 gm., a total allowance of approximately 1,800 calories. The carbohydrate will be slightly below the maximum that the patient will tolerate permanently; the protein will be equivalent to 1 gm. for each kilogram of the body weight. The total calories will be slightly below the permanent daily caloric requirement of the patient if he is at all active physically.

Permanent Maintenance Diet 7 would then be as follows:

Carbohydrate: from 1 to 3 per cent. vegetables, 100 gm.; from 3 to 5 per cent. vegetables, 200 gm.; 10 per cent. vegetables, 150 gm.; orange, 100 gm. (one small or ten sections); bread, 20 gm. (one slice, three-eighths inch thick); Uneedas (two) or five saltines.

Protein and Fat: eggs, 3 gm; meat or fish, 110 gm.; cream, 200 gm., or half pint scant; butter, 70 gm., or 5 tablespoonfuls (level); olive oil, 15 gm., or 3 teaspoonfuls.

TABLE 1.—*Diabetic Test Diets* *

					Carbohydrate										Protein and Fat						
Diet No.	Carbohydrate	Protein	Fat	Calories (Approximately)	1-3% Vegetables	3-5% Vegetables	10% Vegetables	15% Vegetables	Orange	Apple	Bread	Uneeda	Potato	Oatmeal	Eggs	Meat, Fish	Cheese	Cream 20% Fat	Butter	Olive Oil	Diet No.
1	15	40	120	1,300	200	100	...	...	...	...	..	..	...	...	2	70	20	150	60	10	1
2	20	40	120	1,320	200	200	...	...	...	...	..	..	...	...	2	70	20	150	60	10	2
3	25	40	120	1,340	200	200	...	...	50	...	..	..	...	...	2	70	20	150	60	10	3
4	30	40	120	1,360	200	200	...	...	100	...	..	..	...	...	2	70	20	150	60	10	4
5	40	40	120	1,400	200	200	...	...	100	...	..	2	...	...	2	70	20	150	60	10	5
6	50	40	115	1,460	100	200	150	...	100	...	..	2	...	...	2	70	20	150	55	10	6
7	60	40	110	1,400	100	200	150	...	100	...	20	2	...	...	2	70	..	150	55	10	7
8	75	40	110	1,450	100	200	150	...	100	100	20	2	...	...	2	70	..	150	55	10	8
9	100	40	100	1,460	100	100	150	100	100	100	20	2	100	...	2	70	..	100	55	10	9
10	125	40	90	1,470	100	100	150	100	100	100	40	2	200	...	2	70	..	100	45	10	10
11	150	40	80	1,480	100	100	150	100	200	100	60	3	200	...	1	70	..	100	45	..	11
12	200	40	60	1,500	100	100	150	100	200	200	80	3	200	200	1	70	..	100	45	..	12

Corrections for Body Weight (Adults Only)

35 to 40 kg. (75 to 90 pounds) — 25 per cent.
40 to 50 kg. (90 to 110 pounds) — 20 per cent.
50 to 55 kg. (110 to 120 pounds — 10 per cent.
65 to 70 kg. (140 to 155 pounds) + 10 per cent.
70 to 80 kg. (155 to 175 pounds) + 20 per cent.
80 to 90 kg. (175 to 200 pounds) + 25 per cent.
For permanent maintenance diet, increase the amount of protein by ½ and the fat by ¼

* For persons weighing from 55 to 65 kg. (120 to 140 pounds). Protein, ⅔ gram per kilogram of weight. Carbohydrate begins with minimum amount on which the ketogenic ratio might be preserved in an individual of this weight and calory requirement while at rest. The total calories are from 20 to 25 per cent. below the average requirement for individuals of this weight while at rest.

Distributing these foods into three meals, the menus would read:

Total allowance for the day, cream, one-half pint; butter, 5 level tablespoonfuls.

Breakfast: small orange or ten sections of medium sized orange; two eggs; one-half slice of bread, three-eighths inch thick; coffee with cream.

Dinner: broth, 1 cup; meat, 80 gm.; vegetables (from 1 to 3 per cent.), 50 gm. as salad, with olive oil, 1½ teaspoonfuls and vinegar; vegetables (from 3 to 5 per cent.), 100 gm.; vegetables (10 per cent.), 100 gm.; one-half splice of bread, three-eighths inch thick; coffee or tea with cream. (In place of the 10 per cent. vegetables and the bread, an orange or a small apple may be substituted.)

Supper: meat or fish, 30 gm., or one egg plus two large sardines, 20 gm., or one fourth of Neufchatel cream cheese or one-third herring; vegetables (from 1 to 3 per cent.), 50 gm., with olive oil as at dinner; vegetables (from 3 to 5 per cent.), 100 gm.; vegetables (10 per cent.), 50 gm.; two Uneeda biscuits or five saltines; coffee or tea with cream.

If undue loss in weight should eventually occur on a permanent maintenance diet, in spite of the fact that the urine continues to be free of sugar and of acetone and the blood sugar level remains low, the fat allowance may be increased 20 or more grams by the addition of bacon or other forms of fat.

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A BLOOD PRESSURE PARADOX*

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An apparently healthy young man, who applied for insurance in one of the large companies, was found to have a normal systolic blood pressure, but no diastolic pressure. The diastolic pressure, taken by an approved auscultatory method, registered zero. The examiner was in a quandary. According to his conception of the mechanics of the circulation, a person having no diastolic blood pressure should not be living and apparently well. The young man appeared sound and healthy. Repeated examinations showed no diastolic pressure. What report would he make?

In attempting to clear up this apparent contradiction, let us review some of our knowledge of blood pressure. The systolic pressure is the maximum pressure in the artery at the height of the ventricular systole. The

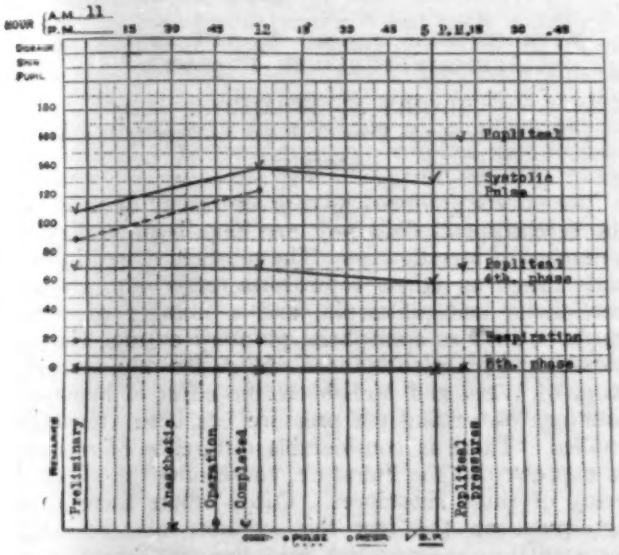

Chart 1.—Blood pressure paradox continuous; fifth phase at zero; in this case, in the dorsal position, the popliteal blood pressure readings are higher than the readings at the elbow.

diastolic pressure is the constant arterial pressure, efficient in maintaining the flow of blood through the systemic vessels. The pulse pressure represents the force of each ventricular contraction. The blood pressure ratio is a fraction having the pulse pressure as numerator and the diastolic pressure as denominator. It presents graphically the relation between cardiac energy and its efficiency in maintaining the systemic circulation. In a normal individual, its value is ½.

In taking the blood pressure by the auscultatory method, the inflatable cuff is wrapped closely about the arm, the bell of the stethoscope is placed over the brachial bifurcation in front of the elbow, and pressure is increased in the cuff until a pulsation has been heard through the stethoscope and has disappeared. When the pressure in the cuff is gradually released, a point is reached where the sound of pulsation reappears. The pressure in the cuff at this point is taken as the systolic pressure. As the pressure in the cuff is further reduced, changes in the sound of pulsation result in the division of the blood pressure reading into five phases. The first phase is noted when, as pressure in the cuff is reduced, the first sound is heard. With the second and third phases we are not now concerned. The fourth phase is indicated by a change from a clear and sharp sound to a less distinct, dull pulsation. The fifth phase is noted on the disappearance of this dull sounding pulsation. Often the custom is followed of noting the diastolic pressure at the beginning of the fifth phase,

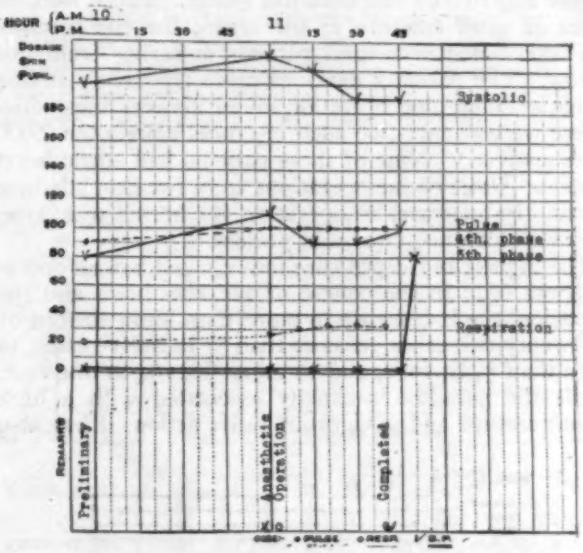

Chart 2.—Blood pressure paradox, increased pulse pressure, and high blood pressure index in a case of aortic disease; the paradox disappeared on the administration of pure oxygen at the close of the operation.

when all sound disappears. More careful observers take the beginning of the fourth phase as the point noted for the diastolic pressure. Usually there is a difference of only a few millimeters between the two readings.

But in some instances, the fourth blood pressure phase, beginning at the usual point, descends the scale until it reaches zero. There is then no fifth phase. Now appears, in the experience of one who is accustomed to read the diastolic pressure at the fifth phase,

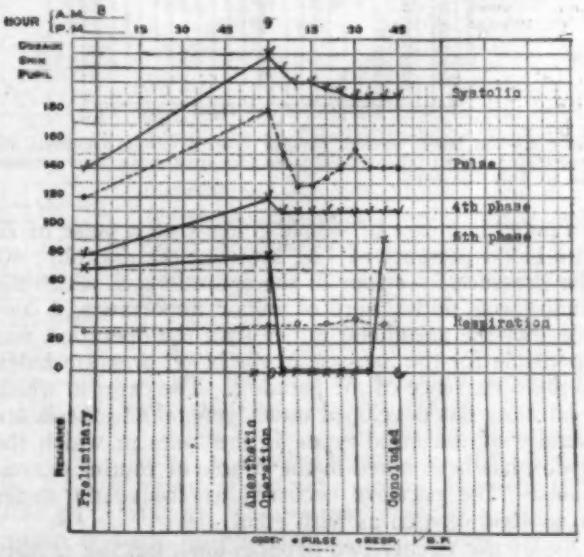

Chart 3.—Blood pressure paradox develops in the course of anesthesia for an operation for exophthalmic goiter; the pulse pressure and the blood pressure index also are increased; the paradox disappears when pure oxygen is administered at the close of the operation.

the blood pressure paradox: for the sphygmomanometer indicates no diastolic pressure, yet there must be a diastolic pressure, for the patient is undoubtedly living. The observer has good reason for shaking his head in perplexity.

* Read at the New York Academy of Medicine, before the New York Society of Anesthetists, March 20, 1924.

The blood pressure paradox has been noted most frequently in cases of aortic insufficiency, hyperthyroidism and fracture of the skull. To determine the approximate frequency with which the paradox occurs, 2,000 consecutive examinations have been analyzed. The paradox was found in four cases: two of aortic insufficiency and two of exophthalmic goiter. There were no cases of skull fracture in the series, but the paradox has been noted in several patients suffering from this injury. The paradox develops more frequently among patients undergoing operation under general anesthesia. There were twenty-two such instances among the 2,000 cases analyzed. Nine of these patients had aortic heart disease. Three of the operations were for exophthalmic goiter. In one case, an operation for hernia was done, but exophthalmic goiter was present.

The highest blood pressure index noted before operation was ¾. In the course of the anesthesia and the operation, the index rose to more than ¾ in sixteen of the twenty-two cases, to more than ¼ in twelve cases, to more than ⅝ in four, and to more than ⅞ in one case. While the paradox is usually associated with a high pulse pressure and a vigorous heart action, it has also

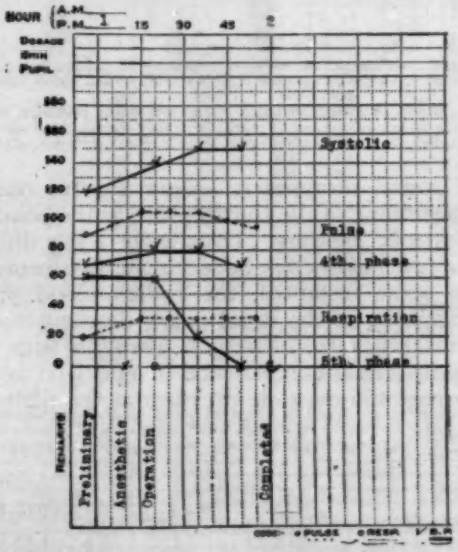

Chart 4.—The blood pressure paradox appears during anesthesia for an operation for skull fracture; the pulse pressure and the blood pressure index are both increased.

been noted in a case of simple goiter with a pulse of 70 and a blood pressure of 120, systolic; 80, diastolic; 40, pulse pressure. As four of the operations in which the paradox was noted were of minor importance, I conclude that the anesthetic rather than the operation was responsible for the increase in the blood pressure index and the occurrence of the paradox. The cases in which the paradox has developed under general anesthesia are generally of the same types as the cases in which the paradox has been noted in the course of routine examinations. The paradox occurred as frequently under nitrous oxid-oxygen as with ether.

One of the twenty-two patients died, but the fatality was readily explained by the severity of the condition of intestinal obstruction from which the patient suffered. I conclude that the occurrence of the paradox did not influence the recovery of the patients in this series. As to the age of the twenty-two patients in whom the paradox was noted, nine were less than 20; nine, between 20 and 30; two, between 30 and 70; and two, more than 70 years of age.

CONCLUSIONS

In certain blood pressure examinations, the fourth phase may extend down the scale to zero, resulting in the entire absence of the fifth phase. In these cases, observers who note the diastolic pressure at the fifth phase find the diastolic pressure at zero and are mystified by the occurrence of the blood pressure paradox.

The diastolic pressure should be noted at the beginning of the fourth rather than the fifth phase.

The blood pressure paradox occurs with hyperthyroidism, aortic heart lesions, fracture of the skull, and during general anesthesia. It may be continuous or may occur intermittently.

The occurrence of the blood pressure paradox does not seem to influence recovery.

131 Waterman Streeet.

RAISING CEREBROSPINAL FLUID PRESSURE

WITH ESPECIAL REGARD TO THE EFFECT ON LUMBAR PUNCTURE HEADACHE *

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The effects produced by a great variety of drugs on the cerebrospinal fluid pressure have been studied by a number of investigators. The substances used include such drugs as ether, chloroform, strychnin, atropin, amylnitrite and pilocarpin, and a number of organ extracts, such as epinephrin, pituitary extract, choroid plexus, and brain substances. More recently, since the work of Weed and McKibben, the effect of hypotonic solutions on raising the pressure has been frequently studied. There is considerable difference of opinion, as expressed in the literature, concerning the effect of many of these substances. Often where there is an agreement on the fact that certain substances will increase the cerebrospinal fluid pressure, there is no entire agreement as to how this is accomplished, some believing that it is simply the result of the effect of the pressor action on the circulation being transmitted to the fluid pressure. The present discussion concerns the effects of epinephrin, pituitary extract and hypotonic solutions on the cerebrospinal fluid pressure.

Weed and Cushing [1] and others have stated that injections of pituitary extract cause an increase in the rate of outflow of cerebrospinal fluid, and assume that there is an increased formation of the cerebrospinal fluid. Dixon and Halliburton [2] find no evidence that pituitary extract affects the cerebrospinal fluid pressure. Becht [3] and his co-workers, while agreeing that the injection of pituitary extract will increase the cerebrospinal fluid pressure, consider that this is not dependent on an increase in the cerebrospinal fluid secretion but believe that it is due to the pressor action of the drug, and state that after this wears off, there is a drop in the cerebrospinal fluid pressure.

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* From the Boston Psychopathic Hospital.

* This study was aided by funds from the Division of Mental Hygiene of the Massachusetts Department of Mental Diseases.

1. Weed and Cushing: Studies on the Cerebrospinal Fluid: The Effect of Pituitary Extract on Its Secretion, Am. J. Physiol. **36**: 77, 1915.
2. Dixon and Halliburton: The Cerebrospinal Fluid: Secretion of the Fluid, Am. J. Physiol. **47**: 215, 1913-1914.
3. Becht, F. C., and Gunnar, H.: Volume Changes in the Cerebrospinal Fluid After Adrenalin, Pituitrin, Pilocarpin and Atropin, Am. J. Physiol. **56**: 231 (June) 1921. Becht, F. C., and Matill, P. M.: Studies on the Cerebrospinal Fluid, ibid. **51**: 126 (Feb.) 1920. Becht, F. C.: Studies on the Cerebrospinal Fluid, ibid. **51**: 1 (Feb.) 1920.

EFFECT OF PITUITARY EXTRACT ON CEREBROSPINAL FLUID PRESSURE

Our own experiments, carried out on human subjects who were having lumbar puncture for diagnosis or treatment, and who willingly cooperated in the experiments, show that in the majority of cases an intramuscular injection of 1 c.c. of obstetrical pituitary extract causes a rise in the cerebrospinal fluid tension measured by a manometer connected with the lumbar subarachnoid space. This rise begins nearly always in from three and one-half to five minutes after the injection of the drug, and continues for a period of at least forty-five minutes, which is the length of time that the manometric readings were made.

The final pressure reading, after pituitary extract was injected, as compared with the original reading, shows an increase of from 10 to 100 per cent. In most of our experiments the rise was represented by an increase of about 35 to 40 per cent. over the original pressure reading (Charts 1 and 2).

The first group of experiments was made without the withdrawal of any fluid, although occasionally a drop or two escaped when the connection was made with the manometer. In other words, the pressure reading obtained after the administration of pituitary extract represented an increase over cerebrospinal fluid tension, which seemed to be the patient's normal tension. Other experiments were conducted after the withdrawal of from 10 to 25 c.c. or more of cerebrospinal fluid. When fluid is withdrawn, the pressure drops. There then occurs, normally, a more or less slow increase in the pressure, tending to reestablish the original equilibrium. The time that is required for this varies from one hour up to an indefinite period. However, when pituitary extract was given in these cases, after a latent period of from three to five minutes, during which there was a very slow increase in pressure similar to that which occurred prior to the injection of pituitary extract, a rapid increase in the pressure occurred. These experiments offer very definite proof that, in the human subject, 1 c.c. of pituitary extract given intramuscularly causes an increase in the cerebrospinal fluid pressure, as shown by readings taken in the lumbar region. Whether this effect is due to an increase in the amount of cerebrospinal fluid, or whether it is due to the effect on the circulation, is not proved by these experiments.

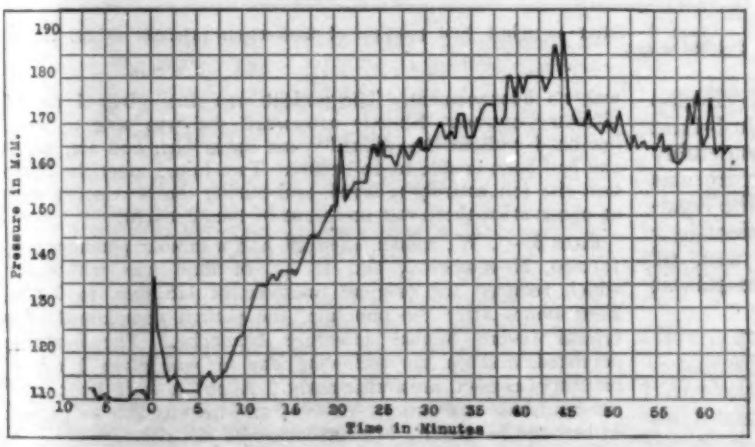

Chart 1.—Effect of intramuscular injection of pituitary extract on cerebrospinal fluid pressure.

Pituitary extract, injected intraspinally, that is, injected directly into the cerebrospinal fluid, has no effect on the cerebrospinal fluid pressure. In other words, it is apparently quite inert when given directly into the subarachnoid space (Chart 3).

EFFECT OF EPINEPHRIN ON CEREBROSPINAL FLUID PRESSURE

Epinephrin injected intramuscularly caused very little change in the cerebrospinal fluid pressure level in the majority of cases (Chart 4). In a few cases, a slight rise in pressure was observed. These were patients who showed a sensitivity to epinephrin. In other words, they gave what would be called a positive Goetsch test, showing an increase in the systolic blood pressure with a drop in the diastolic blood pressure, increase in respiratory rate, and uncomfortable sensations. When epinephrin is given intravenously, it causes a very marked increase in blood pressure, and, in these circumstances, an increase in the cerebrospinal fluid pressure. Given into the subarachnoid space, it caused no variation in the fluid pressure. It is thus seen that the intramuscular injection of epinephrin acts quite differently on the cerebrospinal fluid pressure than does the injection of pituitary extract.

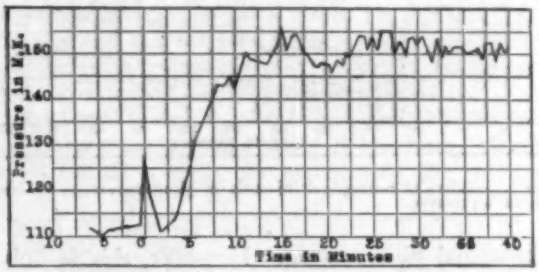

Chart 2.—Effect of intramuscular injection of pituitary extract on cerebrospinal fluid presure.

EFFECT OF HYPOTONIC SOLUTION ON CEREBROSPINAL FLUID PRESSURE

The intravenous injection of from 100 to 200 c.c. of distilled water, a hypotonic solution, causes a definite rise in the cerebrospinal fluid tension, which lasts for a considerable period of time. In some observations we have found that it continued considerably over an hour, while under observation. In other cases it was found that, after thirty minutes, the fluid pressure began to fall, and at the end of an hour had reached its original level (Chart 5).

The rise in fluid pressure produced by the injection of from 100 to 200 c.c. of distilled water in the average-sized human being is much the same as that produced by 1 c.c. of pituitary extract; namely, between 10 and 100 per cent. of the original pressure. In a few instances there is very little or no effect, but in the majority of instances it is about 35 to 50 per cent. The effect is obtained also after the cerebrospinal fluid tension has been lowered by the withdrawal of cerebrospinal fluid. In other words, in the human subject the effect on the cerebrospinal fluid pressure for the first three quarters of an hour is very similar for both the intravenous injections of from 100 to 200 c.c. of distilled water and the intramuscular injection of 1 c.c. of pituitary extract.

The work of Weed [4] and his co-workers and others has shown that, following the injection of hypotonic solution, there is evidence of an increased amount of fluid in the cerebrospinal fluid spaces. The close analogy between the effect of pituitary extract and the hypotonic solution would lead one to assume that in this case also there is an increased amount of fluid in the

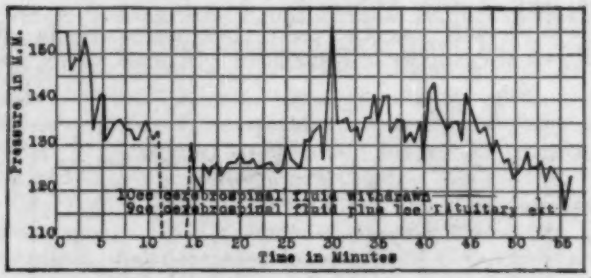

Chart 3.—Effect of intraspinal injection of pituitary extract on cerebrospinal fluid pressure.

cerebrospinal fluid system. However, this is only an assumption by analogy, and we have no definite proof of this fact; but we may safely state that the injection of 1 c.c. of pituitary extract or the injunction of from 100 to 200 c.c. of distilled water causes a marked and prolonged rise in the cerebrospinal fluid pressure.

APPLICATION IN THE TREATMENT OF LUMBAR PUNCTURE HEADACHE

On the basis of these observations, it seemed worth while to investigate the effect of such injections on lumbar puncture headaches. It is generally assumed that the majority of lumbar puncture headaches are associated with a decrease of the cerebrospinal fluid tension. It is not in our province in this presentation to consider the cause of this drop in pressure. However, we have observations to show that patients who develop lumbar puncture headaches have a cerebrospinal fluid pressure during their headache which is considerably less than that obtained when the original puncture was made. That is, subsequent punctures during the headache have shown a fluid pressure, with the patient in a recumbent position, varying from 0 to 70 mm. of fluid. It is asking a good deal of a patient to submit

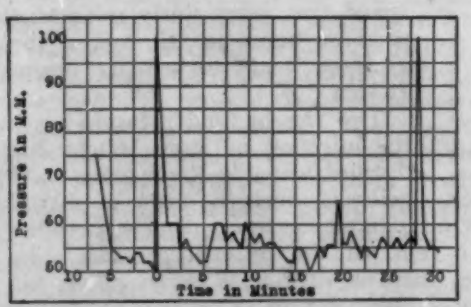

Chart 4.—Effect of intramuscular injection of epinephrin on cerebrospinal fluid pressure.

to a lumbar puncture while he is suffering from a headache, and we therefore have only a limited number of observations.

4. Weed, L. H., and McKibben, P. S.: Pressure Changes in the Cerebrospinal Fluid Following Intravenous Injection of Solutions of Various Concentrations, Am. J. Physiol. **48**: 512 (May) 1919; Experimental Alteration in Brain Bulk, ibid. **48**: 531 (May) 1919.

Observations were made on a group of patients suffering from lumbar puncture headaches and treated by an injection of 1 c.c. of pituitary extract or from 100 to 200 c.c. of distilled water, or a combination of these two injections. A few suggestive protocols are reproduced.

REPORT OF CASES

CASE 1.—A. S., a man, aged 52, had a lumbar puncture performed, October 29. The pressure was 140 mm.; 25 c.c. of fluid was withdrawn, after which the spinal fluid pressure was 20 mm. One hour after the puncture, the patient complained of a slight frontal headache and a stiff neck. There was no nausea or vomiting. On the 30th and 31st the headache persisted with about the same intensity. November 1, the patient still complained of pain in the head of about the same character as on the preceding days. He was given 1 c.c. of pituitary extract intramuscularly. About thirty minutes after the injection, he reported that his head was clear, that his neck was no longer stiff, and that the pain had entirely disappeared. There was no recurrence of the headache during the next seven days while under observation.

CASE 2.—N. M., a woman, aged 46, had a lumbar puncture performed October 20, and 25 c.c. of fluid was withdrawn. The original pressure before withdrawal of fluid was 135 mm. After the withdrawal of fluid, the pressure fell to 5 mm. About two hours after the lumbar puncture, the patient reported a severe frontal headache and a stiff neck, which caused her acute pain on movement. October 21, the headache and stiffness of the neck were still present. October 22, there

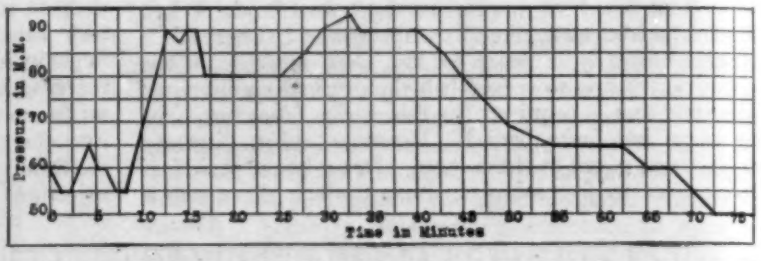

Chart 5.—Effect on spinal fluid pressure of intravenous injection of 200 c.c. of distilled water.

was no improvement. The patient was then given 1 c.c. of pituitary extract. Shortly afterward she was able to move her head without any difficulty, sat up in bed, and ate, which she had been unable to do before. Two hours after the injection she felt entirely relieved, and during the next seven days of observation there was no return of the headache.

CASE 3.—J. W., a man, aged 29, had a lumbar puncture performed, November 2, and 15 c.c. of fluid was withdrawn, which reduced the original pressure of 125 mm. to 0 mm. Four hours after the puncture, the patient complained of a typical severe lumbar puncture headache. The headache persisted, and on the following day he was given 1 c.c. of pituitary extract intramuscularly. About a half hour later his headache was entirely relieved and he was able to get out of bed and be about. The headache did not recur.

CASE 4.—R. H., a man, aged 28, had a lumbar puncture performed, September 8. The original pressure of 160 mm. was reduced to 110 mm. by the withdrawal of 20 c.c. of fluid. There was no headache the day of the puncture, but the next day the patient complained of a frontal headache with pain in and about the eyes. He was given 1 c.c. of pituitary extract intramuscularly. Fifteen minutes later the frontal headache had disappeared, but the pain in the eyes had become worse. At the end of three hours the pain in the eyes also disappeared, and he felt quite relieved.

CASE 5.—W. R., a man, aged 28, had a lumbar puncture performed, October 29. The original pressure was 165 mm. After the withdrawal of 25 c.c. of fluid, the pressure was 70 mm. He had no discomfort, October 29 or 30, but the evening of the 31st he developed a severe headache. It was frontal and vertical in location, and throbbing in character. He said that when he moved it felt as if the roof of his head were

coming off. There was no nausea or stiffness of the neck. Next day the headache persisted and took in the entire head. The slightest movement caused intense throbbing, and when he coughed it seemed as if the roof of his head were coming off. He was given 1 c.c. of pituitary extract intramuscularly. Twenty minutes later the head felt better and he could cough with perfect freedom. He got up without any signs of dizziness or ill feeling. One hour after the administration of pituitary extract he was dressed and asked for his dinner, although previously he had refused food. He remained quite well throughout the day. Next day he had a slight headache, which disappeared the succeeding day.

COMMENT

In the majority of cases, relief was obtained by the use of either of these methods or a combination of the two. In some cases the effect of pituitary extract was very striking, and, to the patient, wonderful. In a few cases the effect was nil. In most cases, if relief was obtained it was permanent. In a few cases in which the effect was marked and immediate, it lasted from five to ten hours and then wore off, the headache returning. In several of these cases a second injection or even a third had an effect similar to the first; that is, the headache was relieved. Similarly with the distilled water injections, the effect was at times quite striking, in other cases less so; and in a couple of cases in which the effect was very satisfactory, it lasted a number of hours and then the headache returned.

CONCLUSIONS

Injections of pituitary extract or of hypotonic solution will produce an increase of the cerebrospinal fluid pressure and will often give prompt relief to a lumbar puncture headache. In some cases this relief is permanent. In other cases it is temporary, but may be obtained again by a repetition, and in some cases it is without appreciable effect.

720 Commonwealth Avenue.

USE OF SODIUM CHLORID IN TREATMENT OF INTESTINAL OBSTRUCTION

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The toxemia of high intestinal obstruction results from the action of some poison, the exact source and nature of which are a matter of dispute. The toxic agent causes a marked destruction of tissue protein. Whipple [1] and his associates have shown that, when the intestine of the dog is experimentally obstructed, there is an increased nitrogen excretion coincident with a high level of nonprotein and urea nitrogen in the blood. The increase of nonprotein nitrogen in the blood is due largely to the fact that the nitrogenous bodies are being formed more rapidly than they can be excreted by the kidney. Actual renal insufficiency plays only a small rôle in the intoxication in most instances.

It is noteworthy that, notwithstanding the large amount of research work done on intestinal obstruction and the acceptance of the fact that the intoxication is essentially a chemical one, no advance has been made in the treatment of the toxemia. The mortality has remained practically the same.

1. Cooke, J. V.; Rodenbaugh, F. H., and Whipple, G. H.: J. Exper. Med. 23: 717 (June) 1916.

In a study of several patients having an acute toxic reaction following gastro-enterostomy,[2] we have found certain changes in the blood and urine in addition to those shown by Whipple to be characteristic of intestinal obstruction. In these cases there was almost an entire absence of chlorid excretion in the urine, with low blood chlorid and an alkalosis as evidenced by the high carbon dioxid combining power of the plasma. The reactions we have interpreted as due to a temporary obstruction of the duodenum at the gastro-enterostomy stoma.

The foregoing findings have led us to study the chemical changes in the blood of the dog after upper intestinal tract obstruction. We have made an analysis of the blood daily and followed the nitrogen and chlorid excretion in the urine following obstruction of the pylorus [3] and of the intestine [4] at different levels.

It has been found that a fall in the chlorids is the fundamental change taking place in the blood after the upper intestinal tract is obstructed. At the same time

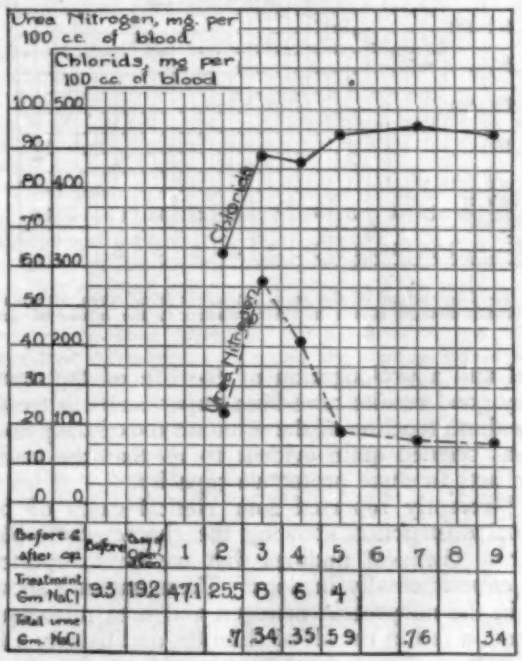

Chart 1.—Pyloric obstruction: changes in the blood chlorids, blood urea nitrogen and total sodium chlorid excreted in the urine; the daily quantity of sodium chlorid given as treatment is tabulated in its relation to the blood changes.

there is a diminished excretion of chlorids in the urine. With vomiting there is some loss of chlorids, but we have shown that this loss also takes place in rabbits with the intestine obstructed. Rabbits cannot vomit. A similar change in chlorids occurred also in one patient who did not vomit at any time, and has been repeatedly observed in dogs in the absence of any significant loss of chlorids by vomiting. The loss of chlorids by vomiting only accentuates the intoxication.

Dogs with obstruction of the duodenum have been treated with sodium chlorid both from the beginning of the obstruction and after the development of the toxic symptoms.[5] Dogs have been kept alive twenty-seven and twenty-eight days by the daily subcutaneous

2. Haden, R. L., and Orr, T. G.: Bull. Johns Hopkins Hosp. 34: 26 (Jan.) 1923.
3. Haden, R. L., and Orr, T. G.: J. Exper. Med. 37: 377 (March) 1923.
4. Haden, R. L., and Orr, T. G.: J. Exper. Med. 37: 465 (Oct.) 1923.
5. Haden, R. L., and Orr, T. G.: J. Exper. Med. 38: 55 (July) 1923.

administration of physiologic sodium chlorid solution when treated from the beginning of the obstruction. Control dogs of the same weight treated with the same quantity of sterile distilled water died in three or four days. After the characteristic rise in the urea and nonprotein nitrogen and fall in the chlorids of the blood has taken place, the administration of sufficient sodium chlorid will usually cause a return of these changes to

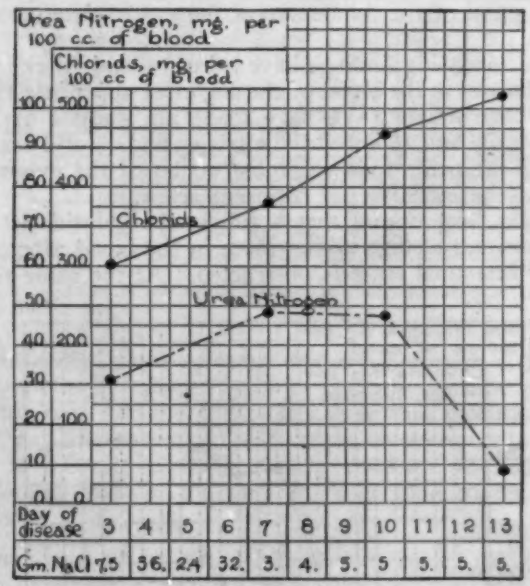
Urea Nitrogen, mg. per 100 cc. of blood
Chlorids, mg. per 100 cc of blood
Chlorids
Urea Nitrogen
Day of disease 3 4 5 6 7 8 9 10 11 12 13
Gm NaCl 7.5 36. 24 32. 3. 4. 5. 5 5. 5. 5.

Chart 2.—Obstruction of the small intestine: blood urea nitrogen and blood chlorid changes shown in their relation to the intake of sodium chlorid.

normal and a prolongation of the life of the animal. Equally good results have been experienced in treating dogs with obstruction of the jejunum and of the pylorus.

It has seemed quite evident to us that the sodium chlorid acts in some protective capacity.

We[6] recently reported four clinical cases of high intestinal obstruction showing the characteristic blood and urine chemical findings that we have repeatedly found experimentally in dogs. These patients showed a rise in the nonprotein nitrogen and urea nitrogen of the blood, a fall in the blood chlorids, and usually a rise in the carbon dioxid combining power of the plasma. The nonprotein nitrogen excretion in the urine was increased, with almost a total absence of urine chlorids.

REPORT OF CASES

The two following cases, one pyloric and the other small intestine obstruction, show the effect of treatment with sodium chlorid:

CASE 1.—*Pyloric obstruction.* A man, aged 48, treated in the Bell Memorial Hospital, two years previous had a gastro-enterostomy for pyloric obstruction that was considered due to ulcer. Recently he had been vomiting almost all food taken and had been rapidly losing weight. Examination revealed a large, atonic, ptotic stomach, which retained almost all of a barium meal after twenty-four hours. A mass could be felt in the pyloric region. At one time 2,500 c.c. of liquid was removed from the stomach by tube. It was evident from the physical and roentgen-ray findings that he had an obstruction of the pylorus and also of the gastro-enterostomy stoma.

A second gastro-enterostomy was done under general anesthesia. Tissue removed at that time showed carcinoma.

The day after the operation, the condition of the patient was much worse. The pulse was weak and thready, and he was vomiting small quantities of dark brown material with a slight fecal odor. After the administration of 47 gm. of sodium chlorid, the vomiting ceased, and the improvement was gradual and continuous thereafter. The blood chemical findings and the quantity of chlorid given are shown in Chart 1. The results of the blood examination the day before and the day after operation were lost. The chlorids were only 320 mg. per hundred cubic centimeters of blood after the administration of 75 gm. of sodium chlorid during the preceding three days. Not until the chlorids reached 470 did the urea nitrogen drop to nearly normal limits. The carbon dioxid combining power was as low as 31 after the operation, and gradually rose to 58. The blood creatinin and sugar were normal. Chart 1 shows also the very low total urine chlorid excretion.

It is quite evident in this case that the chlorids were not given in sufficient quantity before and the day of operation, as indicated by the low chlorid reading of 320. When the dosage given was of sufficient size, the toxic symptoms soon disappeared and the blood changes returned to within normal limits.

CASE 2.—*Intestinal obstruction.* A woman, aged 34, had had a cholecystectomy five months before, followed by a streptococcus peritonitis and intestinal obstruction for which an enterostomy was done. The onset of the present illness was three days before admission, with pain in the abdomen and violent vomiting. The patient took cathartics, but was unable to get the bowels to move. When admitted, she was having cramplike abdominal pain and vomiting every few minutes. The abdomen was distended and tender. The pulse rate was 120. Blood was taken for examination, and 3 per cent. sodium chlorid solution was given at once by hypodermoclysis. The blood chemical findings are shown in Chart 2.

Before treatment was begun, the blood chlorids were 300 mg. per hundred cubic centimeters of blood, and the urea nitrogen was 30.8.

In two days after treatment was begun, all vomiting had ceased and the sodium chlorid was given by mouth in tablet form. Recovery from the attack was complete, and the patient was discharged from the hospital in eleven days with normal blood urea and chlorids.

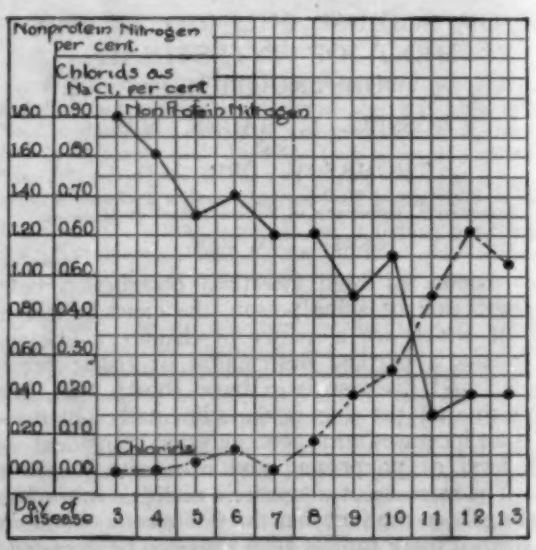

Chart 3.—Changes in the urine nonprotein nitrogen and chlorids of the patient with intestinal obstruction; the nonprotein nitrogen decreases as the chlorids increase.

CONCLUSIONS

These two case reports serve to emphasize the importance of the administration of chlorids in the treatment of intestinal obstruction toxemia.

It seems proved to us by animal experiments that the chlorids act as a protecting agent in intestinal obstruction by reducing, in some manner, the toxemia.

6. Haden, R. L., and Orr, T. G.: Surg., Gynec. & Obst. 37: 465 (Oct.) 1923.

It is suggested in cases of acute intestinal obstruction that 1 gram of sodium chlorid per kilogram (2⅕ pounds) of body weight be given as the initial dose, and continued daily in sufficient quantity to return and maintain the sodium chlorid in the blood within normal limits.

Clinical Notes, Suggestions, and New Instruments

MODIFICATION OF ANESTHESIA MASK

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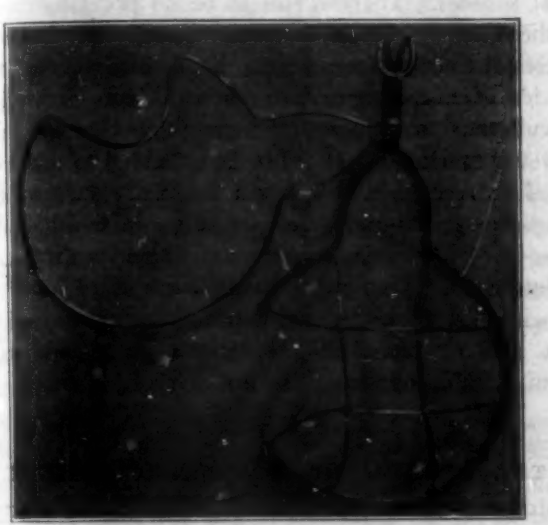
In doing a tonsillectomy with the LaForce instrument, using the Sluder technic, I have had considerable trouble in keeping the patient under the anesthetic, particularly when



Modified anesthesia mask.

using ether with the open method, on account of the mask being held up off the face of the patient by the instrument underneath. It occurred to me that a notch in the side of the mask through which the instrument could pass would allow the mask to rest well down over the face without the annoyance of having it continually lifted up by the instrument. To this end, I had the changes made, as can be noted, with entirely satisfactory results. After the tonsil is once engaged and the instrument tightened, the face is entirely covered while awaiting the period of coagulation, the degree of anesthesia is always under control, and the operating time is much shortened. An ordinary wire mask is rather more easily altered than some of the other varieties.

THE USE OF INSULIN IN A CASE OF ACIDOSIS FOLLOWING TRAUMA

GEORGE GINSBERG, M.D., HOBOKEN, N. J.
Assistant Attending Physician, St. Mary's Hospital

T. M., a schoolboy, aged 11, with negative family and past history, admitted to the surgical service of Dr. Joseph Londrigan at St. Mary's Hospital, Hoboken, N. J., Nov. 7, 1923, at 7 p. m., had been struck by a truck, and had a fracture of the left tibia and fibula in the lower third, and contusions of the chest and abdomen. The boy was well nourished, and weighed about 70 pounds (32 kg.); the skin was pale and the mouth dry; he had a very anxious expression, and was breathing rapidly. The temperature was 99 F.; the pulse, 120; the respiration, 32. Excepting for evidence of fracture of the left leg, the examination was negative

On the morning of the next day the patient vomited frequently. He was very restless, tossing about the bed and moaning. He also complained of pains in the chest and difficulty in breathing. The temperature was 100 F.; the pulse, 110; the respiration, 42. The rapid respiration suggested pneumonia. Examination revealed râles throughout the lungs, but no evidence of consolidation.

The following morning (Novenmber 9), the boy was much worse than before. He appeared like one in shock. The temperature was 100 F.; pulse, from 130 to 140 a minute; respiration, from 50 to 55 a minute. He was very restless and vomited frequently. The routine morning urine examination on this day showed 0.5 per cent. glucose, acetone 4 plus, and diacetic acid.

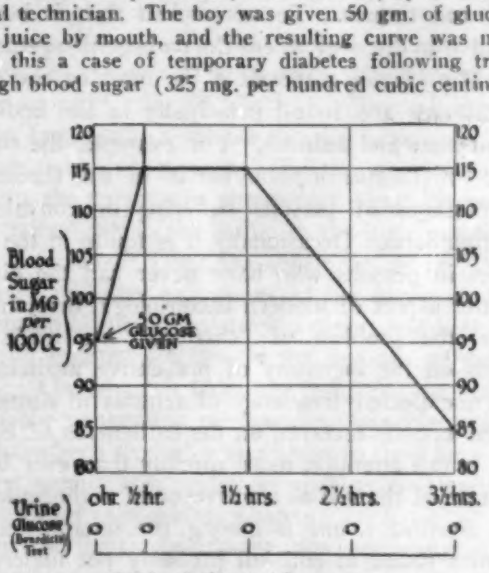
The boy's mother was thoroughly questioned for symptoms of diabetes in the boy, but there was nothing suggestive of that disease in his previous history. Another physical examination was made in conjunction with Dr. Londrigan, the visiting surgeon. The boy's condition was desperate; it seemed that he would surely die. It was decided to give him insulin and glucose for the severe acidosis.

Accordingly, at noon, a blood sample was taken from the vein, and 25 units of insulin H-20 (equivalent to 18 units of U-20) was given intravenously together with 200 c.c. of 10 per cent. glucose. This was followed by a hot coffee enema, and a rectal drip of 5 per cent. sodium bicarbonate. The patient took very slowly about 4 ounces (120 c.c.) of orange juice by mouth.

He ceased vomiting, and seemed somewhat improved. He took orange juice willingly now, and at 1:15 p. m. he was given 6 ounces (178 c.c.) of orange juice and 10 units of insulin H-20 subcutaneously. He continued to improve slowly but surely, and a urine examination at 3 p. m. showed 0.25 per cent. glucose and no acetone or diacetic acid. No more insulin was given, but plenty of orange juice, skim milk and water. Recovery from now on was rapid. The next morning the patient was well and the urine findings were normal.

The blood sugar, taken before the insulin treatment, was 325 mg. per hundred cubic centimeters, and the carbon dioxid 37 per cent. by volume. On the following morning when the patient was in good condition, the blood sugar was 95 mg. per hundred cubic centimeters and the carbon dioxid 58 per cent. by volume. For the sake of completeness, a glucose tolerance test was performed, December 15, by S. Senn, the hospital technician. The boy was given 50 gm. of glucose in lemon juice by mouth, and the resulting curve was normal.

Was this a case of temporary diabetes following trauma? The high blood sugar (325 mg. per hundred cubic centimeters)



Result of glucose tolerance test.

would seem to favor this view. The presence of diabetes before injury was ruled out by an absolutely negative history. The presence of diabetes after the acute symptoms had subsided was ruled out by (1) normal urine and blood findings on a regular mixed diet; and (2) by the normal glucose tolerance curve.

It is suggested that insulin be tried in other acute conditions when blood and urine examinations show evidence of severe acidosis.

624 Bloomfield Street.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, MAY 10, 1924

NEW BACTERIOLOGIC DISCOVERIES

Successful attack on the microbiotic enemies of man requires some knowledge of their usual dwelling places and the ways by which they travel on their harmful trips. Therapy is attempting to discover substances that are maximally toxic for the infecting parasites and minimally toxic for the infected host; or, failing in this ideal of modern chemotherapy,[1] it seeks to enhance the protective mechanisms of the body by calling into activity all of the available powers expressed by the biologic term immunity. Preventive medicine, involving personal and public hygiene, aims, on the other hand, to avert the distribution of the harmful micro-organisms and block their entrance into the organs and tissues. To accomplish this, it becomes imperative to discover where the pathogenic agents may lurk. The species responsible for most of the infectious diseases are found principally in the bodies of diseased man and animals. For example, the natural habitat of *Bacillus diphtheriae* is in the throat and nasal passages of persons suffering or convalescing from diphtheria. Occasionally it is found in the same localities in persons who have never had the disease. The latter aspect of modern bacteriology, involving, as it does, the problem of "carriers," has made new demands on the ingenuity of preventive medicine.

The unexpected frequency of tetanus in connection with the wounds received on the battlefields of France served to call attention more forcibly than ever before to the rôle of the soil as a purveyor of pathogenic bacteria. *Bacillus tetani* is among the microbic agents sometimes found in soil but probably not undergoing multiplication there. In this category of facultative parasites belong *Bacillus welchii* of emphysematous or gaseous gangrene, and the more recently popularized *Bacillus botulinus*. Not long ago the British Medical Research Committee[2] reported incidentally that the undesirable *Bacillus histolyticus*, occasionally isolated from war wounds, had been obtained from earth. It was a record of great bacteriologic importance when Peterson and Hall[3] of the University of California encountered a strain of *Bacillus histolyticus* in a survey of arable California soils for anaerobic bacteria; for it was the first recovery of this species in America, and one of the few records of its occurrence in soil. Till then it had been known in this way only in the war zone. More recently, Hall[4] has discovered another strain of *Bacillus histolyticus* in human feces. The suggestion thus at once occurs that this highly pathogenic organism, like *B. welchii*, *B. tetani* and *B. botulinus*, at least occasionally, if not usually, makes its home in the intestinal tract of man and possibly other animals, and gains access to the soil in part from fecal sources. There seems to be no previous record of the recovery of *Bacillus histolyticus* directly from the intestinal tract or from feces. Hall's discovery of this species of micro-organism in human feces as well as in cultivated soil furnishes most suggestive evidence, however much it may need to be extended to make the proof more cogent, to explain the occurrence of this dangerous micro-organism in wounds in which conditions are favorable for contamination with fecally polluted soil. One more living form thus joins the growing list of occasional intestinal micro-organisms that may at times assume serious pathogenic rôles when suitable opportunities are afforded them.

1. Limitations of Chemotherapy, editorial, J. A. M. A. 82: 969 (March 22) 1924.
2. British Medical Research Committee, Report 39, 1919.
3. Peterson, E., and Hall, I. C.: The Isolation of Bacillus Histolyticus from Soil in California, Proc. Soc. Exper. Biol. & Med. 20: 502 (May) 1923.
4. Hall, I. C.: Recovery of Bacillus Histolyticus from Human Feces, Proc. Soc. Exper. Biol. & Med. 21: 198 (Jan.) 1924.

THE PROMISE OF A LONGER LIFETIME

Modern hygiene has been described as the reaction against the old fatalistic creed that deaths inevitably occur at a constant rate. The study of vital statistics shows that there is no "iron law of mortality." According to a report[5] prepared for the National Conservation Commission fifteen years ago, statistics for India showed that the average duration of life there was less than twenty-five years. In Sweden it was over fifty years; in Massachusetts, forty-five years. The length of life is increasing wherever sanitary science and preventive medicine are applied. In India it is stationary. In Europe it doubled in three and a half centuries. The rate of increase during the seventeenth and eighteenth centuries was about four years a century; during the first half of the nineteenth century, about nine years a century; during the latter half of the nineteenth century, about seventeen years a century; and in Germany, where medical and sanitary science has reached the highest development, about twenty-seven years a century. The only comparative statistics available in this country are for Massachusetts, where life is lengthening at the rate of about fourteen years a century, or half the rate in Germany.

5. Bulletin of the Committee of One Hundred on National Health, Being a Report on National Vitality, Its Wastes and Conservation, Washington, July, 1909, No. 30.

Such generalizations are, indeed, encouraging in the outlook they present. The promise they hold out for a greater conservation of human vitality through the lengthening of the span of life heartens the sanitarian to renew his efforts; and sometimes it induces the philanthropist to facilitate the efforts of present-day preventive medicine with support of a substantial financial character. Few persons are so constituted, however, that they are quite content calmly to await a benefit that will be long delayed in its arrival. One of the difficulties confronting the advocates of forest conservation by extensive tree planting consists in the long period required for the growth of the tree to marketable maturity. The bustling, up-to-date American is not always willing to anticipate the needs of a coming generation. In the rush of present-day life, he has become accustomed to expect results here and now. The time once required to build a transcontinental railway line or to construct a Panama canal now seems almost like an eternity to one who has become accustomed to observe the ceaseless labors of day and night shifts of workmen, and the overnight delivery of letters from coast to coast. Little wonder, then, if he exhibits some restlessness in the face of a seeming slowness of the movement to conserve human life. At any rate, he needs encouragement through specific examples.

Fortunately, from time to time facts are collated that are sufficiently striking to make a profound impression on even an indifferent citizen. Not long ago Senator Copeland, while still commissioner of health of New York City, made the official statement for his department that, "generally speaking, where two persons died fifty years ago, out of every 1,000 population, only one died last year" (1920). This means that if the death rate of the year 1872 had prevailed in the year just closed, 1923, there would have died in the city of New York 185,737 persons, as compared with an actual number of deaths of 69,452, a saving during the year of 116,285 lives.

There can be little doubt that most of this tremendous decrease in the death rate was the direct result of the application of preventive measures by the sanitary officials. How has it come about? From the records submitted,[6] it appears that in New York City in 1877, 105 children under 5 years of age died out of every thousand living of that age group, as compared with twenty deaths of this age group in the year 1923, a decrease of 81 per cent. If, as is sometimes alleged, the death rate in this group can be taken as a measure of the sanitary progress of a community, there is reason alike for congratulation and for optimism concerning the future. In giving credit for the benefits secured, the health authorities allege that the principal factors in this tremendous reduction of the mortality in this age group have been the control of the infectious diseases of childhood, especially diphtheria; the use of a pure milk supply, attained after years of constant supervision and regulation; the well directed activities of officials charged with constant care of children, and the aid of a great number of side agencies, chiefly philanthropic, working in cooperation with health officials.

Meanwhile, smallpox has become an almost negligible disease in our great metropolis. Deaths from typhoid have reached a low rate; and, as a cause of death, malarial fever has been almost completely eradicated in that city. Diphtheria has, of course, yielded to the modern treatment, and other familiar maladies have shown considerable modification. The New York report states that the increase in the expectation of life has been almost entirely confined to the ages before 35 years. In the future, the health officer must, of necessity, consider steps to be taken to minimize the mortality among those of middle and advanced life. There is much to encourage man today to seek to secure a normal lifetime.

6. Improved Health Conditions in New York City in the Past Fifty Years, Pub. Health Rep. 39: 526 (March 14) 1924.

THE NONPROTEIN NITROGENOUS COMPONENTS OF BLOOD

For more than a century it has been known that nitrogenous products other than proteins circulate in the blood stream; in fact, Prevost and Dumas showed as early as 1821 that extirpation of the kidneys may be followed by an increase in the urea content of the blood. The more careful study of the nonprotein nitrogenous components of this fluid was necessarily delayed until suitable methods of estimation were put at the disposal of investigators. Scarcely more than a decade has elapsed since the fruitful procedures now in vogue in American biochemical laboratories were first developed.[1] Meanwhile it has become apparent that the facts made available thereby have significance in more than one respect. On the one hand, data regarding the nonprotein nitrogenous blood components have attained undeniable value in the interpretation of kidney function. They are dwelt on in the clinical laboratory of today as indexes of the degree and type of retention occurring in specific cases; and both diagnosis and prognosis hinge on the findings of the biochemist. On the other hand, the details of the distribution of the nonprotein nitrogenous components in the blood have been studied with respect to their bearing on nitrogen metabolism, quite as well as the degree of elimination of nitrogenous waste.

From the latter standpoint, the accumulated data have been somewhat disappointing to many persons, notably the clinicians. They have been encouraged by the information secured from blood chemistry in respect to renal functions and the corresponding conditions of the kidney. The study of blood sugar, a procedure made easy by the modern investigator, tended to intensify their enthusiasm for chemical methods applied to the blood. They had come to expect that further

1. Folin, Otto: Non-Protein Nitrogen of Blood in Health and Disease, Physiol. Rev. 2: 460 (July) 1922.

data on nonprotein nitrogen in cases uncomplicated by adverse kidney factors might throw a flood of light on obscure diseases, particularly those having a background of metabolic disorder. Numerous laborious collections of statistics regarding the nitrogenous composition of the blood in diseases of the nervous system have failed to elucidate the pathogenesis or the pathology of the subject. For the late toxemias of pregnancy, in which much help from chemical studies has long been ardently desired, Plass [2] has recently remarked that our investigations have led to the belief that blood chemical studies are at present of little or no practical assistance in the clinical management of these cases, and that the older methods of examination—urinalysis, blood pressure readings and ophthalmoscopy—yield the most valuable information concerning the patient's condition. His own studies of the values for nonprotein nitrogenous constituents in the blood plasma have convinced Plass that there are no characteristic changes in the concentrations of these substances during the toxemias of pregnancy, whether they are associated with convulsions or not.

The hope of gaining unusually valuable facts from the contemplation of the amino-acid content of the blood has also not been realized. Folin [1] has pointed out that this is what one might be led to expect. Deamination must be a prelude to the destructive utilization of much of the protein material either ingested or liberated from tissue sources. The long debated theory that deamination proceeds in the walls of the intestine has been abandoned. One might readily expect anomalies of deamination to occur as manifestations of metabolic disorder; indeed, the well known failure of cystin to be consumed in the organism of certain persons furnishes an illustration of precisely this type of defect. But aside from rare instances of such inborn errors of metabolism, deamination abnormalities appear to be of rare occurrence. Folin has remarked that the deamination process appears to be such a fundamental process that one cannot expect to find many pathologic conditions in which the amino-nitrogen of the blood filtrates will vary much from the normal. This is borne out by the latest studies of Greene, Sandiford and Ross [3] at the Mayo Foundation. The amount of aminonitrogen in the blood ranges from 4.8 to 7.8 mg. in 100 c.c., the average amount being 6.3 mg. This was found to be true in normal persons, and in a series of more than 400 observations covering twenty pathologic conditions. The level of aminonitrogen may be increased by flooding the organism with amino-acids arising during digestion or from the rapid autolysis of body tissue, as has been noted in cases of leukemia and acute yellow atrophy of the liver. In general, the quantity in the blood is maintained within the foregoing limits with remarkable constancy. Such disease conditions as uremia, diabetes, exophthalmic goiter or hepatic insufficiency are not exceptions to this rule. Hence the Rochester clinicians properly point out that the observed constancy of this regulation in the presence of such severe metabolic disturbances is direct evidence of the widespread and fundamental nature of the deamination processes in the body.

2. Plass, E. D.: Nonprotein Nitrogenous Constituents of Blood in Eclampsia and Allied Conditions, J. A. M. A. **82**: 266 (Jan. 26) 1924.
3. Greene, C. H.; Sandiford, K., and Ross, H.: The Amino-Acid Content of the Blood in Normal and Pathologic Conditions, J. Biol. Chem. **58**: 845 (Jan.) 1924.

DEHYDRATION AND ANHYDREMIA

When the amount of water eliminated from the body exceeds the total of that which has been taken in as food and drink, together with the quota formed through metabolic processes, dehydration of the tissues and fluids inevitably ensues. In a recent review of the subject, Marriott [1] has pointed out that, since most of the observed physiologic effects of loss of water are referable to the concentration of the blood, and since the condition of the blood serves as a fair index of the degree of dehydration of the body as a whole, the subject of desiccation in general may well be considered from the standpoint of desiccation of the blood, or anhydremia.

Not until recently has the possible clinical importance of desiccation within the body begun to be appreciated. Anhydremia may attend losses of water due to severe diarrheas or to persistent vomiting, particularly in infancy when these conditions are attended with refusal of food. There is a somewhat related, though not necessarily identical, condition observed in traumatic shock, in influenza, in intestinal obstruction, and after severe burns of the surface of the body, when the body suffers a loss of plasma presumably by its passage through the vessel walls. There may be no actual body desiccation, though the solid content of the blood is increased. Decrease in blood volume is common to such conditions and to true anhydremia due to dehydration.

Prostration and collapse are familiar symptoms of acute anhydremia. They give no adequate indication of the damage that the agencies concerned with the deprivation of water may produce in various tissues of the body. Frequently, if not usually, the conditions leading to the anhydremia are involved and complicated by simultaneous infections or toxic factors. Fever is a common accompaniment. From an experimental standpoint, it has been advantageous to learn a method whereby dehydration can be produced without the operation of these other incidental causes. Keith [2] has noted that the intravenous administration of strong sugar solutions leads to an exhibition of the fundamentally characteristic symptoms of rapid dehydration. One tenth of an animal's entire store of water may be thereby eliminated in consequence of the ensuing intense diuresis. A study of the blood and circu-

1. Marriott, W. F.: Anhydremia, Physiol. Rev. **3**: 275 (April) 1923.
2. Keith, N. M.: Experimental Dehydration: Changes in Blood Composition and Body Temperature, Am. J. Physiol. **68**: 80 (March) 1924.

lation after the production of experimental dehydration revealed increased viscosity and hemoglobin concentration, distinctly diminished volume of plasma, but normal arterial blood pressure. There was also indirect evidence of diminished blood volume flow. The blood and circulation were rapidly restored to normal if the animal was given an adequate amount of water within a few hours of the onset of dehydration. Keith has done well to point out that the satisfactory restoration of the circulation and the completeness of recovery in this way show that lack of water is accountable for the circulatory disturbances. It further emphasizes, he adds, the importance of early therapeutic administration of water in all conditions in which dehydration is present.

Current Comment

INSULIN IN TISSUES OTHER THAN THE PANCREAS

If, as one seems warranted in assuming, the pancreas owes its antidiabetic properties to the production of a hormone, insulin, it is equally likely that the source of the latter is in the islands of Langerhans. Products that have the potency, after injection, to lower the content of sugar in the blood have been obtained from various sources; in fact, the generic term "glucokinin" has already been applied by Collip to such substances. There is no assurance, however, that pancreatic insulin is identical with any of these; in fact, they may merely stimulate the secretion of insulin from the pancreas, or perhaps in some cases serve as precursors for its production. That insulin is not confined to the pancreas in the body is evidenced by isolation from the kidney, spleen and muscles of products having an insulin-like action in reducing the blood sugar of animals.[1] Insulin has been found in the blood, so that it evidently circulates in the body; and the Toronto workers[2] have gone so far as to conclude that the mechanism for the rapid disappearance of sugar from the blood after administration of insulin is to be found in the blood itself. Ashby[1] has contended that insulin is not an inherent constituent of cells, but is carried to various tissues by way of the blood stream and then stored in them. He asserts that the insulin-like substance in the tissues disappears shortly after pancreatectomy. Best, Smith and Scott,[3] however, contend that insulin is present in reduced amounts in the tissues of completely diabetic dogs. The extracts of diabetic tissues produced typical insulin effects on normal rabbits and on diabetic dogs. The amount of insulin secured from diabetic tissues by the method they have used is more than half that obtained by the same method from normal tissues. The insulin in the blood and muscles is far more abundant at any moment than that contained in the pancreas. How to explain the occurrence of hyperglycemia and glycosuria in the diabetic patient under such circumstances is one of the immediately puzzling questions. Perhaps the Toronto workers are correct in assuming that insulin must exist in diabetic tissues in a comparatively unavailable form.

1. Ashby, J. S.: An Insulin-Like Substance in the Kidney, Spleen and Skeletal Muscle, Am. J. Physiol. **67**: 77 (Dec.) 1923. Best, C. H., and Scott, D. A.: Insulin in Tissues Other Than the Pancreas, J. A. M. A. **81**: 382 (Aug. 4) 1923.
2. Scott, D. A., and Best, C. H.: The Sugar of the Blood, Am. J. Physiol. **68**: 144 (March) 1924.
3. Best, C. H.; Smith, R. G., and Scott, D. A.: Insulin in Tissues Other Than the Pancreas, J. Biol. Chem. **59**: 30 (Feb.) 1924.

THE PFEIFFER REACTION IN YELLOW FEVER

The immunity that develops in the body after infection with certain micro-organisms may depend on more than one factor. The production of antitoxins that are to be found in the circulating blood is perhaps the most familiar phenomenon. Antitoxic serums find practical application in the attempts to "neutralize" or somehow combat the poisonous products of bacterial growth in the body. Active immunization with bacteria incites in the serum of the exposed person a potent increase of bactericidal properties, sometimes described as the Pfeiffer phenomenon. It is specific in that the bactericidal power toward bacteria other than those employed in the immunization does not exceed the normal. Thus, only strains of the true cholera spirilla disintegrate with great readiness in the serum of cholera-immune animals. The potent antibacterial components of the immune serums were spoken of by Pfeiffer as bacteriolysins or specific bactericidal substances. Since his isolation of *Leptospira icteroides* from yellow fever patients, Noguchi has demonstrated a positive Pfeiffer reaction toward this organism alone with the serum of numerous persons convalescent from the disease. Some negative reactions have been recorded in the literature, notably from Brazil.[1] Noguchi[2] has since reported the verification of the occurrence of the Pfeiffer reaction in the serum of persons convalescent from the disease in Brazil. This would indicate that the causative organism of yellow fever isolated by him in Guayaquil, Peru, Mexico and elsewhere is serologically identical with that occurring in Brazil. The Pfeiffer reaction is prompt and decisive with all the various strains; it is negative with *Leptospira icterohaemorrhagiae*. Although acquired immunity following a genuine attack of yellow fever seems to last through the remainder of life, the Pfeiffer reaction in vaccinated persons and in those who have passed through an attack of the disease does not persist so long. If these findings are substantiated, a positive Pfeiffer reaction, obtained through the use of the species isolated by Noguchi with the serum of a person recently recovered from an infection clinically suspected of having been yellow fever, will provide confirmatory evidence of this disease.

1. Borges, Vieira F.: Pesquizas sobre la etiologia da febre amarella na zona de Nazareth, Estado da Bahia, em 1921, Bol. Soc. Med. e Chirurg. de S. Paulo **4**: 137, 1921.
2. Noguchi, Hideyo: The Pfeiffer Reaction in Yellow Fever, Am. J. Trop. Dis. **4**: 131 (March) 1924.

Drugs in Epilepsy.—In epilepsy, frequently too little or too much bromid is given; 4 gm. a day is the lower limit, 10 gm. the upper. Salt-poor diet is of value only when given combined with bromid. Phenobarbital is recommended as a succedaneum. Morphin and paraldehyd are of no use in epilepsy.—Weber, L. W.: Diagnostische und therapeutische Irrtümer und deren Verhütung, Leipzig, **3**, 1923.

THE CHICAGO SESSION

AMERICAN MEDICAL ASSOCIATION, SEVENTY-FIFTH ANNUAL SESSION CHICAGO, JUNE 9-13, 1924

OFFICIAL CALL

TO THE OFFICERS, FELLOWS AND MEMBERS OF THE AMERICAN MEDICAL ASSOCIATION

The seventy-fifth annual session of the American Medical Association will be held in Chicago, June 9-13, 1924.

The House of Delegates will convene at 10 a. m., Monday, June 9. In the House the representation of the various constituent associations for 1924 is as follows:

Alabama	2	New Hampshire	1
Arizona	1	New Jersey	3
Arkansas	2	New Mexico	1
California	4	New York	11
Colorado	2	North Carolina	2
Connecticut	2	North Dakota	1
Delaware	1	Ohio	6
District of Columbia	1	Oklahoma	2
Florida	1	Oregon	1
Georgia	2	Pennsylvania	9
Idaho	1	Rhode Island	1
Illinois	9	South Carolina	1
Indiana	3	South Dakota	1
Iowa	3	Tennessee	3
Kansas	2	Texas	5
Kentucky	3	Utah	1
Louisiana	2	Vermont	1
Maine	1	Virginia	3
Maryland	2	Washington	2
Massachusetts	5	West Virginia	2
Michigan	4	Wisconsin	3
Minnesota	2	Wyoming	1
Mississippi	2	Alaska	1
Missouri	4	Canal Zone	1
Montana	1	Hawaii	1
Nebraska	2	Philippine Islands	1
Nevada	1	Porto Rico	1

The fifteen scientific sections of the American Medical Association, the Medical Department of the Army, the Medical Corps of the Navy and the Public Health Service are entitled to one delegate each.

The Scientific Assembly of the Association will open with the general meeting to be held at 8:30 p. m., Tuesday, June 10. The sections will meet Wednesday, Thursday and Friday, June 11, 12 and 13, as follows:

CONVENING AT 9 A. M., THE SECTIONS ON

- Surgery, General and Abdominal.
- Ophthalmology.
- Diseases of Children.
- Pharmacology and Therapeutics.
- Miscellaneous Topics — Meeting on Anesthesia (Wednesday).
- Nervous and Mental Diseases.
- Dermatology and Syphilology.
- Preventive and Industrial Medicine and Public Health.
- Miscellaneous Topics — Meeting on Radiology (Thursday and Friday).

CONVENING AT 2 P. M., THE SECTIONS ON

- Practice of Medicine.
- Obtetrics, Gynecology and Abdominal Surgery.
- Laryngology, Otology and Rhinology.
- Pathology and Physiology.
- Stomatology.
- Urology.
- Orthopedic Surgery.
- Gastro-Enterology and Proctology.

The Registration Department will be open from 8:30 a. m. until 5:30 p. m., Monday, Tuesday, Wednesday, and Thursday, June 9, 10, 11 and 12, and from 8:30 a. m. to 12 noon, Friday, June 13.

RAY LYMAN WILBUR, President.

FREDERICK C. WARNSHUIS, Speaker, House of Delegates.
OLIN WEST, Secretary.

MEMBERS OF THE HOUSE OF DELEGATES

A Preliminary Roster of the Legislative Body of the American Medical Association

The list of members of the House of Delegates for the session is incomplete, as a number of the state associations are yet to hold their meetings at which delegates will be elected. The following is a list of the holdover delegates and of the newly elected members (indicated by *) who have been reported to THE JOURNAL in time to be included:

STATE DELEGATES

ALABAMA
S. W. Welch, Montgomery.

ARIZONA

ARKANSAS
George S. Brown, Conway.
*W. R. Bathurst, Little Rock.

CALIFORNIA
C. Van Zwalenburg, Riverside.
E. C. Fleischner, San Francisco.

COLORADO
C. N. Meader, Denver.
*L. H. McKinnie, Colorado Springs.

CONNECTICUT
Walter Ralph Steiner, Hartford.
*John Edward Lane, New Haven.

DELAWARE
W. O. La Motte, Wilmington.

DISTRICT OF COLUMBIA
Wm. Gerry Morgan, Washington.

FLORIDA
John S. Helms, Tampa.

GEORGIA
J. W. Palmer, Ailey.

IDAHO
C. M. Cline, Idaho Falls.

ILLINOIS
J. W. Van Derslice, Oak Park.
C. E. Humiston, Chicago.
H. P. Beirne, Quincy.
R. L. Greene, Peoria.

INDIANA
J. Rilus Eastman, Indianapolis.
*Albert E. Bulson, Jr., Fort Wayne.
*George F. Keiper, Lafayette.

IOWA

KANSAS
M. L. Perry, Topeka.

KENTUCKY
F. A. Stine, Newport.
A. T. McCormack, Louisville.
*Irvin Abell, Louisville.

LOUISIANA
W. H. Seemann, New Orleans.
S. M. Blackshear, New Orleans.

MAINE
*B. L. Bryant, Bangor.

MARYLAND
Thomas S. Cullen, Baltimore.

MASSACHUSETTS
F. B. Lund, Boston.
E. F. Cody, New Bedford.
*H. G. Stetson, Greenfield.
*C. E. Mongan, Somerville.
*J. F. Burnham, Lawrence.

MICHIGAN
J. D. Brook, Grandville.
A. W. Hornbogen, Marquette.
G. E. Frothingham, Detroit.
F. C. Warnshuis, Grand Rapids.

MINNESOTA
J. L. Rothrock, St. Paul.
*J. C. Litzenberg, Minneapolis.

MISSISSIPPI
S. W. Johnston, Vicksburg.

MISSOURI
Emmett P. North, St. Louis.
J. Curtis Lyter, St. Louis.

MONTANA
*C. T. Pigot, Roundup.

NEBRASKA
R. W. Fouts, Falls City.
*A. D. Dunn, Omaha.

NEVADA
Horace J. Brown, Reno.

NEW HAMPSHIRE
*D. E. Sullivan, Concord.

NEW JERSEY

NEW MEXICO
Frank E. Mera, Santa Fe.

NEW YORK
Arthur W. Booth, Elmira.
Nathan B. Van Etten, New York.
Grover W. Wende, Buffalo.
Wm. F. Campbell, Brooklyn.
James F. Rooney, Albany.

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*M. L. Stevens, Asheville.

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W. D. Haines, Cincinnati.
H. M. Hazelton, Lancaster.

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*McLain Rogers, Clinton.

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*Joseph A. Pettit, Portland.

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George A. Knowles, Philadelphia.
John D. McLean, Harrisburg.
G. G. Harman, Huntingdon.
*C. C. Cracraft, Claysville.
*J. N. Hunsberger, Norristown.
*William H. Mayer, Pittsburgh.
*John A. Campbell, Williamsport.
*Edward B. Heckel, Pittsburgh.

RHODE ISLAND
Roland Hammond, Providence.

SOUTH CAROLINA
Edgar A. Hines, Seneca.

SOUTH DAKOTA

TENNESSEE
J. A. Witherspoon, Nashville.
L. L. Sheddan, Knoxville.
Jere L. Crook, Jackson.

TEXAS
Helman Taylor, Fort Worth.
S. P. Rice, Marlin.
Joe Becton, Greenville.

UTAH
E. M. Neher, Salt Lake City.

VERMONT
F. T. Kidder, Woodstock.

VIRGINA
Joseph T. Buxton, Newport News.
*J. Allison Hodges, Richmond.
*Southgate Leigh, Norfolk.

WASHINGTON
D. E. McGillivray, Port Angeles.
*Frederick Epplen, Spokane.

WEST VIRGINA
J. R. Bloss, Huntington.

WISCONSIN
Horace M. Brown, Milwaukee.
Rock Sleyster, Wauwatosa.
*Joseph F. Smith, Wausau.

WYOMING
George P. Johnston, Cheyenne.

ALASKA

HAWAII

ISTHMIAN CANAL ZONE

PHILIPPINE ISLANDS
Walfrido de Leon, Boston, Mass.

PORTO RICO
Agustin R. Laugier, San Juan.

GOVERNMENT SERVICES
United States Army, Elmer A. Dean.
United States Navy, Charles M. DeValin.
United States Public Health Service, J. W. Kerr.

DELEGATES FROM THE SECTIONS

PRACTICE OF MEDICINE
Walter L. Bierring, Des Moines.

SURGERY, GENERAL AND ABDOMINAL
Carl B. Davis, Chicago.

OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY
Geo. Gray Ward, Jr., New York.

OPHTHALMOLOGY
Cassius D. Wescott, Chicago.

LARYNGOLOGY, OTOLOGY AND RHINOLOGY
Burt R. Shurly, Detroit.

DISEASES OF CHILDREN
Isaac A. Abt, Chicago.

PHARMACOLOGY AND THERAPEUTICS
Cary Eggleston, New York.

PATHOLOGY AND PHYSIOLOGY
David J. Davis, Chicago.

STOMATOLOGY
Eugene S. Talbot, Chicago.

NERVOUS AND MENTAL DISEASES
T. B. Throckmorton, Des Moines.

DERMATOLOGY AND SYPHILOLOGY
Howard Fox, New York.

PREVENTIVE AND INDUSTRIAL MEDICINE AND PUBLIC HEALTH
W. S. Leathers, University, Miss.

UROLOGY
Wm. F. Braasch, Rochester, Minn.

ORTHOPEDIC SURGERY
John Ridlon, Chicago.

GASTRO-ENTEROLOGY AND PROCTOLOGY
Louis J. Hirschmann, Detroit.

THE MUNICIPAL PIER
General Headquarters of the Chicago Session. All Section Meetings and Exhibits Will Be Held on the Pier.

AT CHICAGO—1924

Significant Features of the Coming Session

From the point of view of Fellows of the American Medical Association, a unique and important feature of the 1924 session in Chicago is the opportunity to visit the completed headquarters office of the Association. The building at 535 North Dearborn Street, now occupying 100 feet on Dearborn and 160 feet on Grand Avenue, six stories and a high basement—actually a seven story structure—is the largest and most completely equipped of its kind devoted wholly to the activities of a professional organization. Visitors during the Annual Session will find almost four hundred employees at work and will be able to learn at first hand the many ways in which the headquarters office is able to be of service to them. In the assembly room in the headquarters building the House of Delegates will hold its meetings. A souvenir book has been prepared especially for this occasion, illustrating the various councils, departments and bureaus and describing the work of each.

THE MUNICIPAL PIER

Another striking feature of this session is the holding of all the meetings and the technical and scientific exhibits under one roof, and indeed on one floor of the great Municipal Pier. In June, the temperature in Chicago is warm and balmy. At previous sessions the various sections and exhibits were held in downtown hotels, sometimes five or six blocks apart, and much time was lost going from one meeting place to another. It was a stroke of genius that conceived the idea of reconstructing the entire north half of the second tier of the Municipal Pier into a number of vast halls and exhibit rooms capable of seating comfortably the eight or ten thousand physicians and guests who will register at this session. The pier, erected at a cost of about $5,000,000, lies directly north of the down town district, at the foot of Grand Avenue, and less than a mile from the headquarters office of the Association. It is 292 feet wide, extends nearly a mile into Lake Michigan, and is far removed from the noise, bustle, dust and traffic of the Chicago loop district. The recreation end of the pier—almost a mile out in the lake—includes open-air and enclosed restaurants, a public dining room, and comfortable chairs for resting. There are also a large auditorium, an art room and a roof garden. Small boats leave regularly for the city parks and for the down town district at a very reasonable fee. The pictures of the pier in this issue will convey somewhat of an idea of its many attractive features.

The visitor to the Annual Session will enter the pier, which is easily accessible by street car, taxi—about 50 cents from any loop hotel—or motor bus, and will be able to register in the usual manner at the special registration desk. He will then be able to pass through the technical exhibits, which this year include more than a hundred and fifty individual exhibitors and occupy the largest space ever devoted to the purpose. He may pass then to the scientific exhibits, also more numerous and occupying a larger space than ever before. A complete

description of these exhibits appears farther on in this account of the Annual Session.

After passing through the Scientific Exhibit, the visitor will reach a large hall designed for the lecture and motion picture performance, and beyond this will be eight halls for the section meetings, so that the visitor may reach the meeting of any section or any exhibit within five minutes after leaving some other in which he may be interested.

CHANGES SINCE PREVIOUS CHICAGO SESSION

Since the American Medical Association met in Chicago in 1918, a number of important changes have been made in the down town district. The new "Boulevard Link" Bridge was opened in 1920. Michigan Avenue, one of the most beautiful boulevards, has been widened from 60 feet to 130 feet, and a two level bridge across the river permits the rapid passing of traffic. Grand Avenue, by which one reaches the Municipal Pier, is three blocks north of this bridge. Abutting the bridge is the new London Guarantee and Accident Building, awarded a medal as the finest architectural accomplishment of the past year in this district, and also the two Wrigley buildings. On Michigan Avenue also is the new Straus building, one of the tallest in the city. Proceeding south on Michigan Avenue to Twelfth Street, one finds beyond the Illinois Central Station the new Field Museum of Natural History, made possible by gifts from the late Marshall Field aggregating nine million dollars. This was opened two years ago. It covers an area of 700 by 350 feet, and with its 670,000 square feet of floor space is the largest marble building in the world. Here are available ethnological collections depicting the lives of all of the peoples and species of the world.

The Art Institute and the Chicago Public Library, the former at Michigan and Adams and the latter at Michigan and Randolph, are also easy of access and will be remembered by visitors to previus sessions in Chicago as affording interesting and profitable exhibits. At Randolph Street also is the new John Crerar Building, housing the John Crerar Library with its Nicholas Senn room, one of the largest medical libraries in the world, containing many valuable medicohistorical items.

THE MEDICAL SCHOOLS OF CHICAGO

The visitor to the 1924 session will find the medical schools of Chicago undergoing a period of rapid development. The University of Illinois Medical School is now housed in its new building on the site of the old Chicago Cubs baseball park, closely adjacent to the Cook County Hospital. The illustrations indicate the type of building, combining beauty of construction with great utility. The Northwestern University Medical School, while still housed in its old building, has developed plans for the building of a new institution on ground at the foot of Chicago Avenue and the lake front. Rush Medical College has become an integral part of the University of Chicago. The old college building adjoining Senn Hall has been torn down this year and replaced by the Rawson Building, which will house conveniently the post-graduate medical school. The new undergraduate medical school will be on the campus of the University of Chicago, which already includes the Hull laboratories of the Ogden School of Science, with buildings especially devoted to anatomy, physiology, zoology and botany, as well as the special Ricketts Memorial Laboratory of hygiene and bacteriology. The Albert Merritte Billings Hospital and medical school building will be erected at a cost of several million dollars, at the corner of Fifty-Ninth Street and Ellis Avenue. The Loyola University Medical School is continuing in its present plant.

THE OAK STREET BEACH

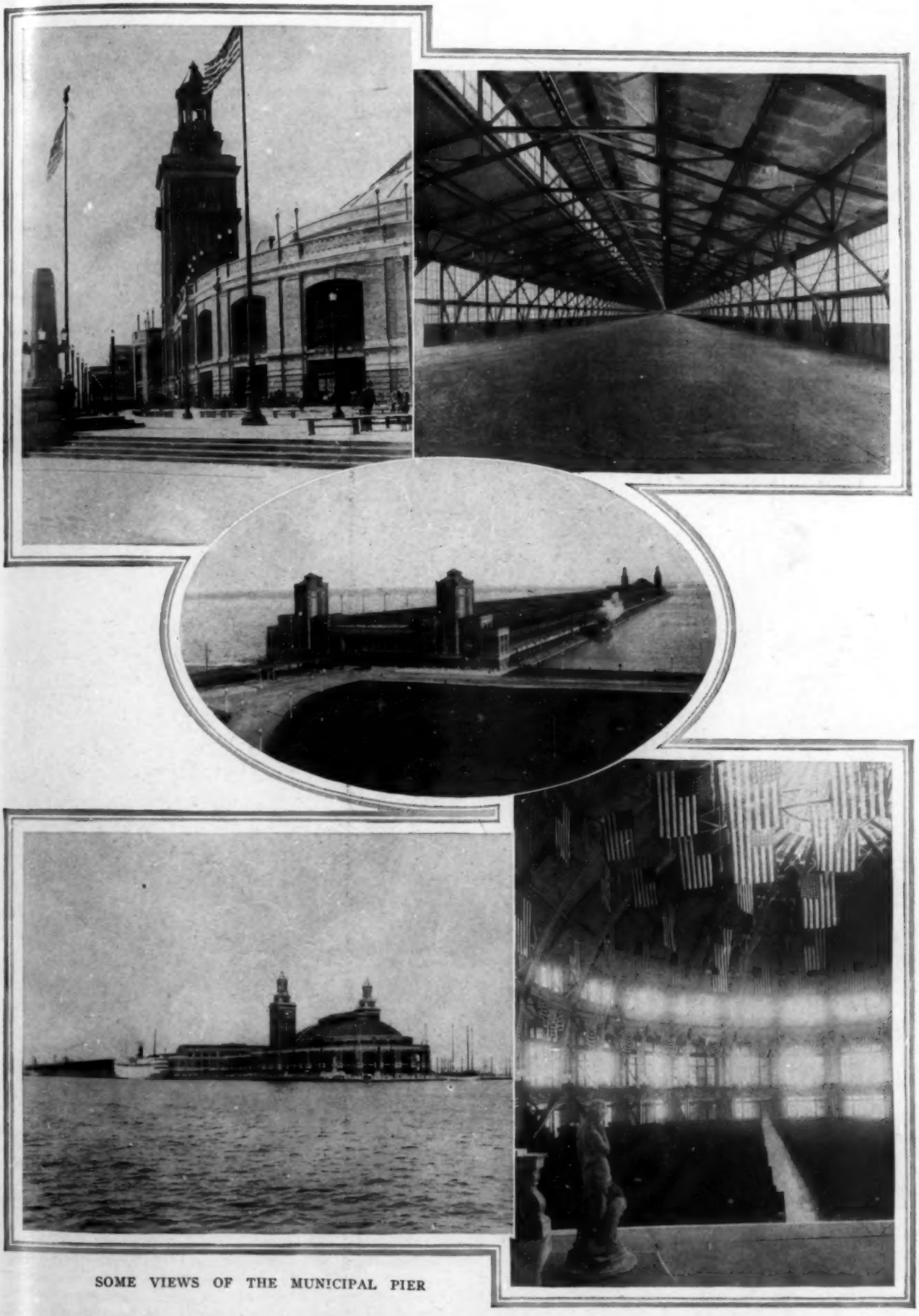
In the Background the Drake Hotel. The President's Reception Will Be Held at the Drake.

CHICAGO HOSPITALS

As is shown on the map, Chicago has numerous hospitals—general and special—which will be available to visitors during the Annual Session for clinics and inspection. Since the last annual session in Chicago, several hospitals have constructed magnificent nurses' homes, and others are contemplating extensive additions.

THE AMERICAN CONFERENCE ON HOSPITAL SERVICE

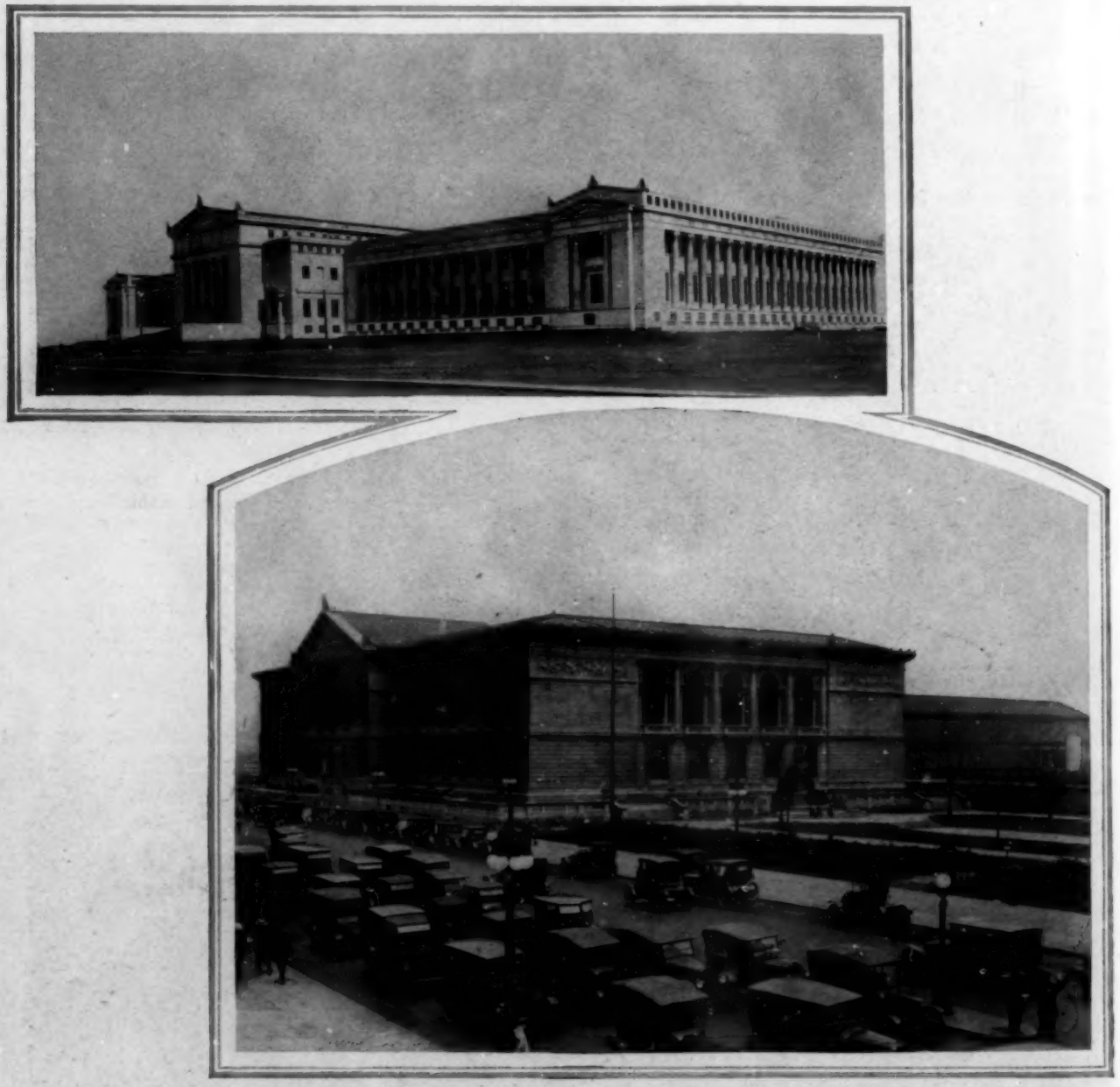
Members of the Association attending the Chicago session will also find interesting a visit to the headquarters of the American Conference on Hospital Service, organized in 1919 under the leadership of Dr. Frank Billings. Here is available



SOME VIEWS OF THE MUNICIPAL PIER

Upper Left: The Outer Promenade. Upper Right: The Interior. Center: A General View. Lower Left: The Pier Viewed from the Lake. Lower Right: The Hall.

material on the planning, organization, equipment and operation of hospitals, sanatoriums and similar institutions. The building includes the headquarters of the American Hospital Association. Under the auspices of the conference, there has been developed a hospital library and service bureau, which during the last three and one-half years has collected and disseminated a vast amount of information on hospital problems. The material from the library of the conference is gratuitously supplied to individuals or groups interested in hospitals or welfare work. Package libraries are available on a wide range of subjects. The headquarters of the conference are in a building at 22 East Ontario Street, shown in the illustration. This building is but a few blocks from the headquarters office of the American Medical Association, and within easy distance of the Municipal Pier. In the adjoining building are the offices of the National Welfare Council, and, nearby, the headquarters of the Board on Hospitals and Homes of the Methodist Episcopal Church.



ABOVE: THE FIELD MUSEUM. BELOW: THE ART INSTITUTE

CHICAGO HOTELS

The visitor to this session need have no fear as to the securing of proper hotel accommodations. Since the last annual session of the Association in Chicago, a number of large and beautifully equipped hotels have been erected on the North Side of Chicago along the drives fronting Lincoln Park. These include the Belden, the Belmont, the Pearson, the Lake Shore Drive Hotel, the Parkway and the Webster. The Edgewater Beach Hotel has been enlarged by the erection of an additional unit, and the Hotel Allerton, a member of the chain of bachelor apartments, is now available adjacent to the Drake Hotel and easily accessible to the Municipal Pier. On the south side, the Hotel Windermere, the Cooper-Carlton, the Sisson, the Elms and many smaller hotels are available, with transportation a matter of fifteen minutes from the loop district by the Illinois Central Railroad. In addition to these outlying hotels, the immense structures within the loop provide space for thousands of visitors.

FEATURES OF MEDICAL INTEREST

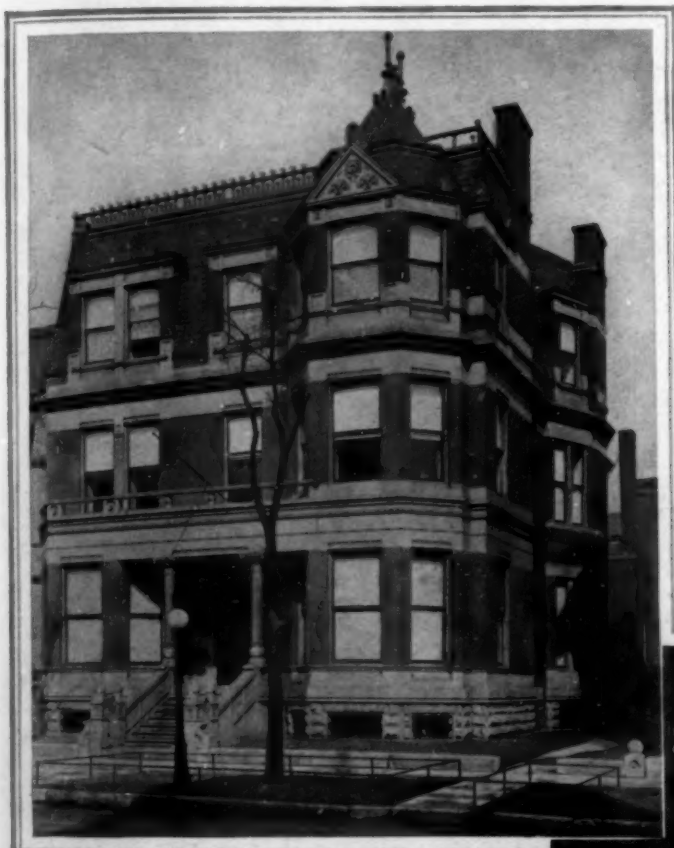
Chicago provides numerous features of special medical interest. During the week of the Annual Session, the headquarters of the Health Department will be thrown open to visitors, and arrangements are being made for automobile service from the pier to the medical institutions under municipal control. The

health commissioner, Dr. Herman Bundesen, has offered to cooperate fully in giving physicians an insight into municipal health activities. The City Contagious Hospital, the Bridewell and the Municipal Tuberculosis Sanatorium are large institutions providing many instructive features. The John McCormick Institute for Infectious Diseases and the Durand Hospital, the Nelson Morris Institute for Medical Research and the research laboratories at the University of Chicago constitute an especial attraction for those interested in modern medical investigation.

It is, of course, almost unnecessary to mention that the packing plants of Chicago and the Stock Yards are a feature of the city's industrial activity, such as is to be seen nowhere else in the world. Guides are available at all times to give visitors an opportunity to inspect the intimate details of the packing of food supplies.

TRANSPORTATION

The announcement of a rate of one and one-half fare for the benefit of those who will attend the session has been authorized by the following passenger associations for railroads within the respective territories: Central Passenger Association; Transcontinental Passenger Association; Western Passenger Association; Southwestern Passenger Association; Southeastern Passenger Association; Trunk Line Association; New England Passenger Association.



ABOVE: BUILDING OF THE AMERICAN CONFERENCE ON HOSPITAL SERVICE. BELOW: AN INTERIOR VIEW

Return Certificates Necessary

To secure the benefit of the reduced rates on the basis of one and one-half fare, it will be necessary to secure return certificates from ticket agents at the time tickets to Chicago are bought. Full fare must be paid on the "going trip," that is, to Chicago, and the return certificates must be secured from agents. These certificates must be signed by the Secretary of the Association at Chicago and validated by a special agent of the railroads, between the dates of June 9 and 13, after which they will be honored for return tickets at one-half fare, if presented to ticket agents not later than the date mentioned below as the "final honoring date."

No reduction in railroad fares can be secured unless return certificates are secured from ticket agents at the time tickets are purchased for Chicago, nor unless these certificates are properly signed by the Secretary and validated by the special agent of the railroads at Chicago.

Return Tickets at Reduced Fare Not Honored on Limited Trains

Return tickets issued at the reduced fare will not be good for use on limited trains on which such reduced fare transportation is not honored.

Stopovers on Reduced Fare Tickets

Return tickets secured at the rate of one-half fare on presentation of certificates will be subject to the same transit limits and stopover regulations that apply on regular one-way tickets.

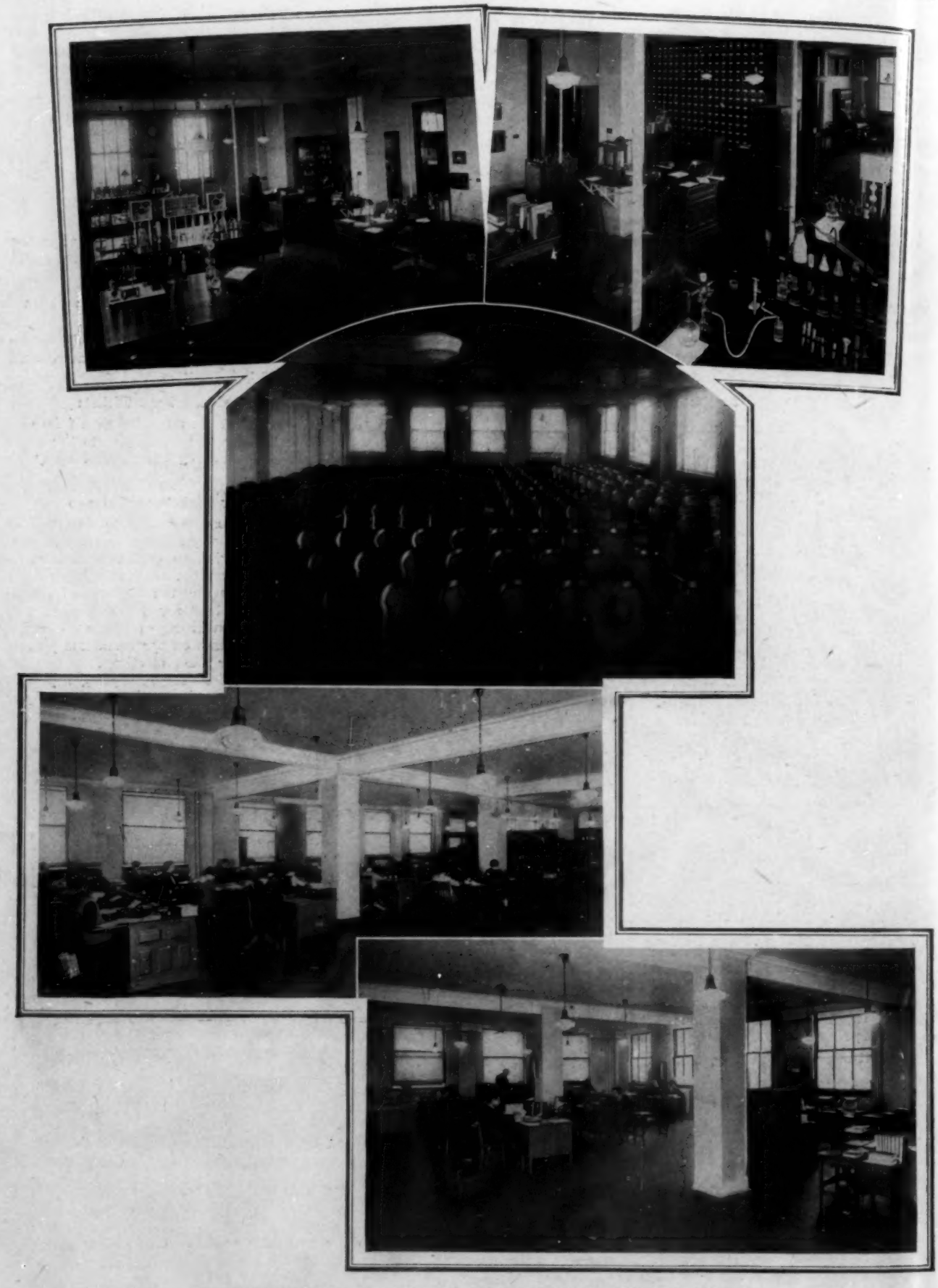
Dates of Sale for Tickets to Chicago

Tickets to Chicago, under the certificate plan, will be on sale on dates early enough, in the respective passenger association territories, to enable purchasers to reach Chicago in time for the first morning of the session. Those who will attend the meetings of special societies which have applied for reduced rates and which will hold meetings in Chicago on June 6 can also secure tickets at reduced fare on the certificate plan in time to reach Chicago for these meetings.

The dates of sale of tickets for the "going trip" will not be the same in all territories, or in all parts of the same passenger association territories, but will be early enough everywhere to enable purchasers of tickets to arrive in Chicago in time for all events of the session.

Return Limit on Tickets

The "final honoring date" for certificates to be used in purchasing return tickets will be June 17. It is to be remem-



HEADQUARTERS OF THE AMERICAN MEDICAL ASSOCIATION

ABOVE: Two views of the Chemical Laboratory. CENTER: Assembly room; House of Delegates will meet in this room. BELOW, LEFT: The department for records of membership and fellowship. BELOW, RIGHT: The manuscript editing room.

HEADQUARTERS OF THE AMERICAN MEDICAL ASSOCIATION

UPPER LEFT: The linotype machines. UPPER RIGHT: The stereotyping room. CENTER: An exterior view. LOWER RIGHT: The gathering, stitching and covering machine. LOWER LEFT: Section of the mailing room.

bered that the certificates must be signed by the Secretary and validated by the representative of the railroads during the time of the meeting—June 9 to 13.

Summer Excursion Rates from the Far West

Summer excursion fares on a lower basis than one and one-half fare will be in effect from points in Arizona, California, Idaho, Nevada, Oregon, Washington and British Columbia on and after May 22, with return limit of Oct. 31, 1924. Those who come from the state named to the Chicago Session will, of course, purchase tickets at the summer excursion rate rather than the return certificate tickets.

Important Directions

When buying tickets to Chicago, purchasers should be sure to ask for *certificates*, not receipts. Certificates will secure reduced fare on return trips; receipts will only show what tickets cost.

Buy tickets in time—do not wait until just before train time. It will require some time for the agent to make out the ticket and certificate.

Certificates are *not* kept at all stations, but the agent at any station can give information as to where they can be obtained.

Present your return certificate at the Registration Bureau for proper endorsement by the Secretary as soon as possible after arrival.

Certificates must be validated by a special agent of the railroads not later than June 13. The final honoring date for validated certificates is June 17, 1924.

Train schedules in Chicago are based on central standard time, one hour later than daylight saving time, which will be in effect in Chicago after April 27.

Automobile Routes to Chicago

The information presented concerning automobile routes has been secured from the best possible sources, but is not "guaranteed." Tourists will do well to inquire at principal points along the way, since roads are constantly undergoing repairs and new routes are being established. Dependable information about the best roads can generally be secured from automobile clubs and chambers of commerce.

From Los Angeles

By National Old Trails Road through Needles, Flagstaff, Holbrook, Los Lunas, Albuquerque, Sante Fe, La Junta, Dodge City, McPherson, Osage City, Kansas City, Columbia, into St. Louis; from St. Louis to Springfield and to Chicago by Joliet on the Mississippi Valley Highway, or from Springfield to Decatur, Danville and then to Chicago over the Dixie Highway.

From Seattle

By Spokane, Wallace, Missoula, Butte, Livingston to Billings; then by Yellowstone Trail to Miles City, Glendive, Ortonville, Minneapolis, Eau Claire, Chippewa Falls, Abbottsford, Waupaca, Oshkosh, Milwaukee, Kenosha to Chicago; or from Billings by the Custer Highway to Sheridan, Spotted Horse, Gillette, Rapid City, Sioux Falls to Sioux City, where inquiry should be made concerning the best route eastward. The route usually taken by those who use Custer Highway is to Omaha.

From Omaha

By way of Council Bluffs, Logan, Boone, Ames and Cedar Rapids to Clinton; or from Council Bluffs to Atlantic, Des Moines, Iowa City, Davenport, De Witt to Clinton; from Clinton to Rochelle, St. Charles, Wheaton and Chicago. Nearly all roads in Iowa are dirt roads.

From St. Louis

To Edwardsville, Gerard, Springfield, and from Springfield by one of the two routes referred to under "From Los Angeles"; or to East St Louis, Vandalia, Effingham, Marshall, Danville, and then to Chicago over the Dixie Highway.

ABOVE: MICHIGAN AVE. LOOKING TOWARD THE BRIDGE. BELOW: THE WRIGLEY BUILDINGS

From Buffalo

To Erie, Ashtabula, Cleveland; from Cleveland by Lorain and Ashtabula, or, by Elyria and Monroeville, to Clyde; then to Stony Ridge and by way of Maumee or by way of Toledo, as preferred; to Delta, Kendalville, Elkhart, South Bend, LaPorte, Chicago Heights and into Chicago.

From Denver

Two routes are given: By way of Fort Morgan, Sterling, Hastings, Lincoln and Omaha; thence by one of the routes

described above to Chicago; or, by way of Deertrail Stratton, Goodland, Russell, Ellsworth, Salina, St. Mary's to Kansas City; then to St. Louis and to Chicago by one of the routes outlined above. From Kansas City to St. Louis: By way of Higginsville, Marshall, Boonville, Columbia, Fulton, St. Charles, into St. Louis.

From New Orleans

By West End, to Madisonville, Hammond, McComb, Jackson, Yazoo City, Clarksville, Tunica to Memphis; ask chamber of commerce or Memphis Automobile Club for directions to Cairo; from Cairo to Anna, Carbondale, Centralia, Vandalia, Effingham, Martinsville, Marshall, Danville and into Chicago over the Dixie Highway.

From Detroit

By way of Ann Arbor, Jackson, Battle Creek, Kalamazoo, Benton Harbor, Michigan City, Gary, Calumet, Homewood, Blue Island into Chicago.

From Philadelphia

By Way of Media, Kennett Square, Bel Air, Uniontown, Washington, Cambridge, Zanesville, Columbus, Richmond, Crawfordsville, Danville and to Chicago on the Dixie Highway.

REGISTRATION

The Bureau of Registration will be located at the west end of the Municipal Pier, the first part of the building to be entered. Members of the Committee on Registration of the Local Committee on Arrangements will be on hand to assist those desiring to register. A branch postoffice in charge of government postoffice officials will be opened for the convenience of visitors, and an information bureau will be operated in connection with the Bureau of Registration.

ABOVE: THE LONDON GUARANTEE AND ACCIDENT BUILDING. BELOW: MICHIGAN AVE., SHOWING ILLINOIS ATHLETIC CLUB, MONROE BUILDING AND UNIVERSITY CLUB

Who May Register

Only Fellows, Affiliate, Associate and Honorary Fellows and Invited Guests may register and take part in the work of the sections. Fellows of the Scientific Assembly are those who have, on the prescribed form, applied for Fellowship, subscribed to THE JOURNAL, and paid their Fellowship dues for the current year. The annual Fellowship dues provide a subscription to THE JOURNAL for one year. Fellowship cards are sent to all Fellows after payment of annual dues, and these cards should be presented at the registration window. Any who have not received cards for 1924 should secure them at once by writing to the American Medical Association, 535 North Dearborn Street, Chicago.

Members in Good Standing Eligible to Fellowship

Members in good standing in county medical societies are members of state associations and of the American Medical Association. All members in good standing are eligible for Fellowship in the Scientific Assembly, and may qualify as Fellows after reaching Chicago; but it will be far better to qualify before leaving home in order that pocket cards may be secured and brought to Chicago so that registration can be more easily and more promptly effected. Application forms may be had on request.

Subscribers to THE JOURNAL who have not qualified as Fellows after formal application cannot register until they have so qualified.

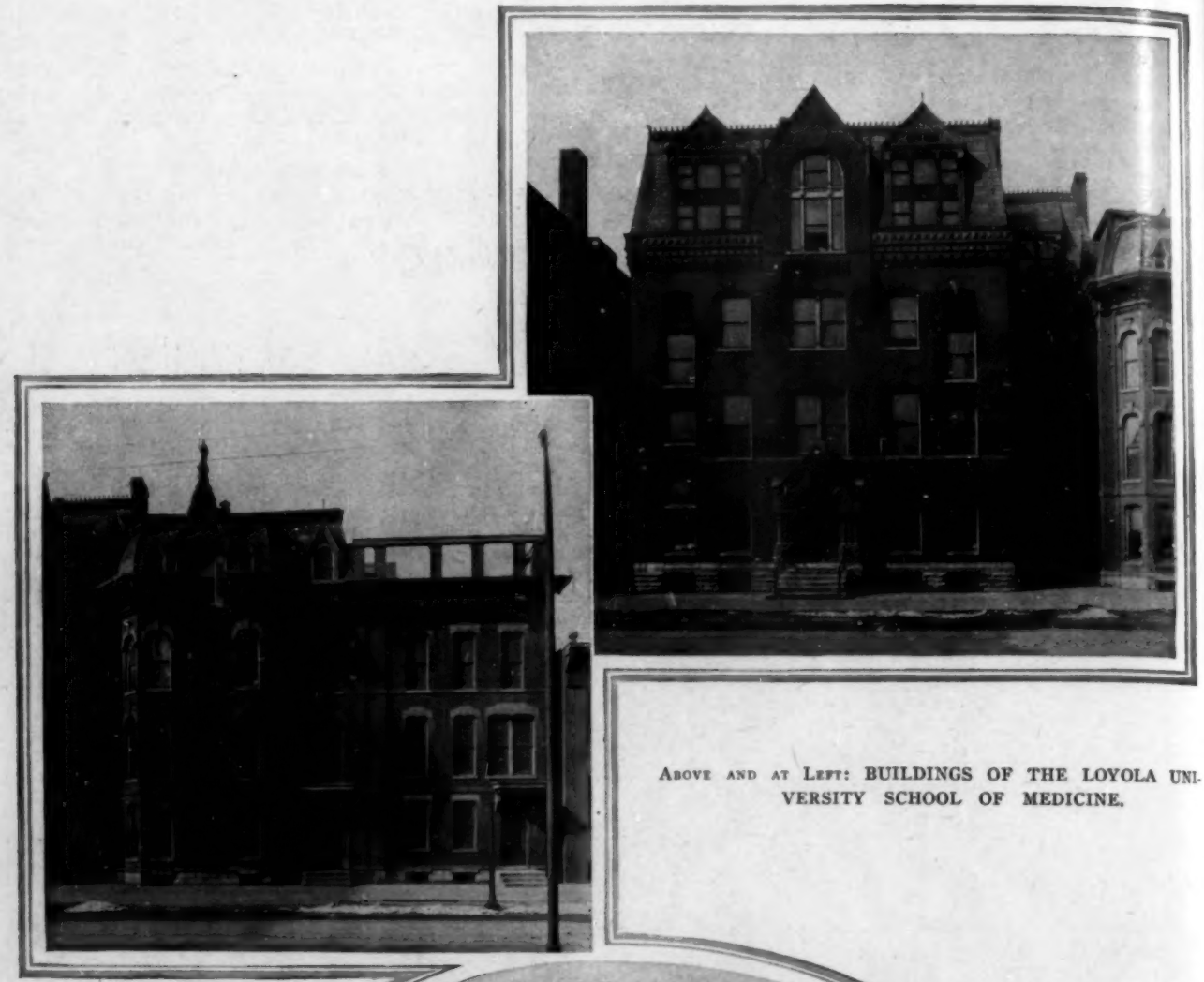
Register Early

Fellows living in Chicago and Illinois, as well as all other Fellows who are in Chicago on Monday and Tuesday, should register as early as possible. The names of those who register on the first day will appear in the *Daily Bulletin* the next day, and this will enable visiting physicians to find friends if they have registered.

Suggestions That Will Facilitate Registration

Fellows should fill out completely the spaces on both sections of the front of the *white* registration card, which will be found on the tables in front of the Registration Bureau.

Physicians who desire to qualify as Fellows should fill out completely the spaces on both sections of the front of the

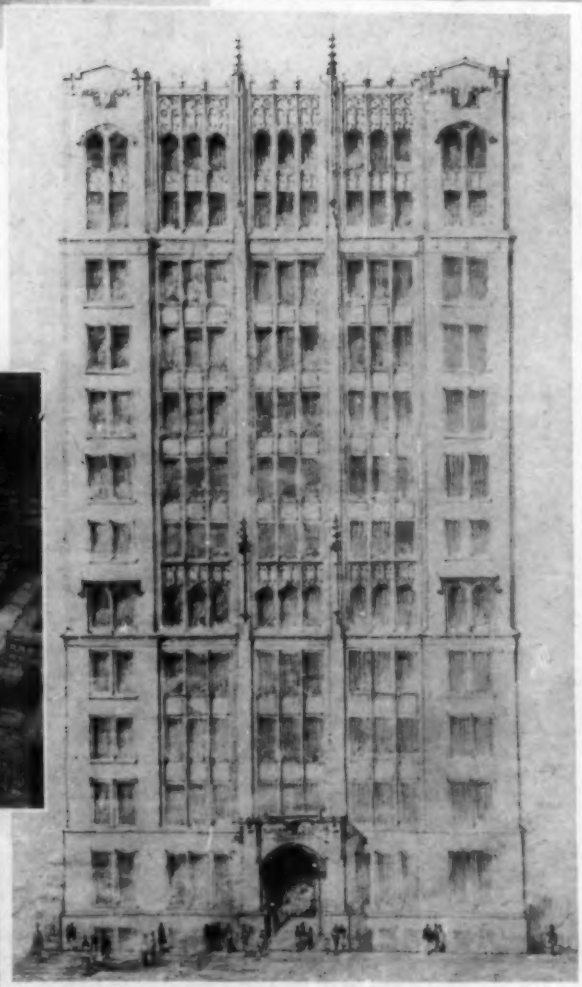


ABOVE AND AT LEFT: BUILDINGS OF THE LOYOLA UNIVERSITY SCHOOL OF MEDICINE.

ARCHITECT'S DRAWING OF NEW NORTHWESTERN UNIVERSITY MEDICAL SCHOOL.

ABOVE: ARCHITECT'S DRAWING OF ALBERT MERRITT BILLINGS MEMORIAL HOSPITAL OF THE NEW RUSH MEDICAL COLLEGE OF THE UNIVERSITY OF CHICAGO.

ABOVE AND BELOW, LEFT: NEW BUILDINGS OF THE UNIVERSITY OF ILLINOIS COLLEGE OF MEDICINE.



TO THE RIGHT: NEW RAWSON MEMORIAL OF THE RUSH POSTGRADUATE SCHOOL OF THE UNIVERSITY OF CHICAGO.

blue registration card, and sign the application on the back. These blue cards also will be found on the tables.

Physicians who take THE JOURNAL but who are not at present Fellows should fill out completely the spaces on both sections of the front of the *blue* registration card, and sign the application on the reverse side.

Entries on the registration cards should be written plainly, or printed, as the cards are given to the printer to use as "copy" for the *Daily Bulletin*.

1. Fellows who have their pocket cards with them can be registered with little or no delay. They should present the filled out *white* registration card, together with their pocket cards, at one of the windows marked "Registration by Pocket Card." There the clerk will compare the two cards, stamp the pocket card and return it, and supply the Fellow with a copy of the official program and other printed matter of interest to those attending the annual session.

2. Those Fellows who have forgotten their pocket cards should present the filled in *white* registration card at the window marked "Paid—No Card." The work of registration at this window will be conducted as rapidly as possible; but the necessity of finding the Fellow's name on the Fellowship roster may occupy a considerable time and will occasion inconvenience to those who neglect to bring their pocket cards with them.

3. The Fellow whose 1924 dues are unpaid should present his filled in *white* registration card with the amount of his Fellowship dues ($5) at one of the windows marked "Cash." Here, too, there will be some delay; but the work of registering will be conducted as promptly as possible.

4. As previously stated, it will assist in registering if those who desire to qualify as Fellows will file their applications and qualify as Fellows by writing directly to the American Medical Association, 535 North Dearborn Street, Chicago, so that their Fellowship may be entered not later than May 22. Any applications received later than May 22 will be given prompt attention, but the Fellowship pocket card may not reach the applicant in time so that he can use it in registering at the Chicago Session.

As already stated, it will be possible for members of the organization to qualify as Fellows at Chicago. In order to do this, applicants for Fellowship will be required to fill out both sections of the front of the *blue* registration card and sign the formal application printed on the reverse side. It is suggested that those who apply for Fellowship at Chicago shall provide themselves, before leaving home, with certificates signed by the secretary of their state association, attesting that they are members in good standing in the state and county branches of the organization. A state membership card for 1924 will be acceptable. The certificate or membership card should be presented along with the filed in *blue* registration card at the window in the registration booth marked "Applicants for Fellowship and Invited Guests."

POSTOFFICE

A branch postoffice will be installed, in connection with the Registration Bureau, at the Municipal Pier. Members and guests are requested to order mail addressed to them "Care American Medical Association, Municipal Pier, Chicago, Ill.," unless they prefer to receive mail at their hotels.

ENTERTAINMENT

The Local Committee on Arrangements, through its Committee on Entertainment, has authorized the following announcements. Other announcements will appear in later bulletins.

The official badge, secured by Fellows and Guests at the time of registration, will be required for admission to all public meetings and entertainments.

Golf Tournament

The tenth annual tournament and dinner of the American Medical Golfing Association will be held at the Olympia Field's County Club, Chicago, June 9. After thirty-six holes of golf, there will be a dinner for the members of the association, and prizes will be awarded. Dr. James Eaves, San Francisco, is president, Dr. Fred Bailey, St. Louis, secretary-treasurer, and Will Walter, 1507 Hinman Avenue, Evanston, Ill., is business secretary of the American Medical Golfing Association.

Entertainment for Visiting Ladies

The Women's Entertainment Committee will receive visiting ladies at the Field Museum, to meet Mrs. William Allen Pusey, on Wednesday afternoon.

On Thursday there will be tours through the Art Institute, the Marshall Field stores, Sears-Roebuck plant and other places of interest. There will be receptions and teas at the Casino and the Fortnightly clubs on Thursday afternoon The booklet to be prepared by the Local Committee on Arrangements will give full information about other entertainment.

Reception at University of Chicago

President and Mrs. Burton will receive visiting ladies at the University of Chicago on Thursday afternoon, June 12.

Tour Through the Armour Plant

A tour through the Armour plant will be arranged for during the session for Fellows and members of their families.

Automobile Ride Over Chicago's Boulevards

Arrangements have also been made with the Royal Blue Line for a forty mile automobile trip over some of Chicago's finest boulevards.

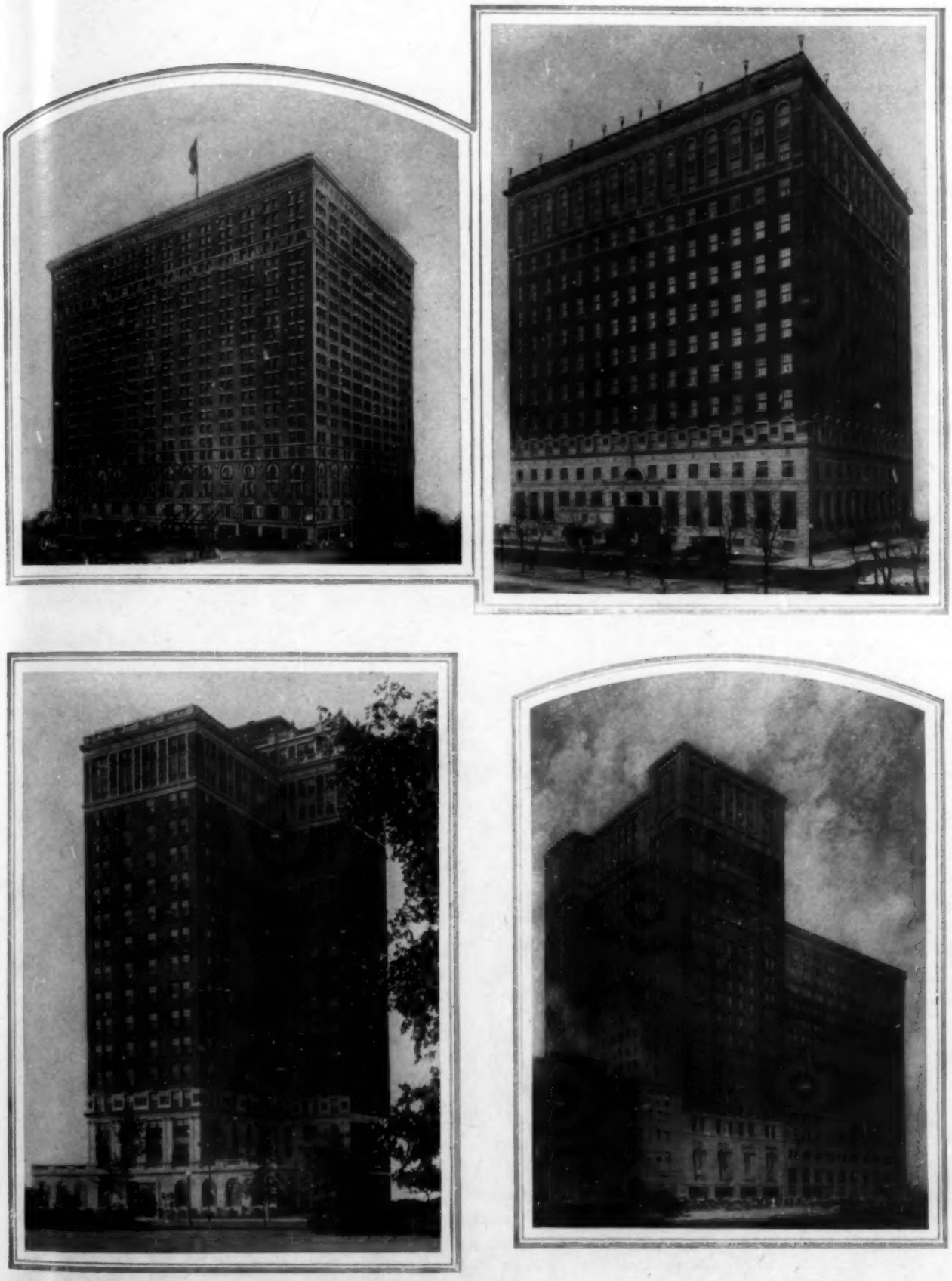
DIAGNOSTIC CLINICS

Diagnostic clinics will be held at the Municipal Pier on Monday and Tuesday, June 9-10. The first clinic on Monday will be at 10 a. m.; on Tuesday, at 9 a. m. The schedule submitted below is tentative and subject to change.

1. (*a*) Prevention of Diphtheria: Schick Test; Administration of Toxin-Antitoxin Mixture.
   (*b*) Prevention of Scarlet Fever. Demonstration of Susceptibility, Immunization.
   John McCormick Institute for Infectious Diseases, Chicago.
2. Skin Diseases. HOWARD FOX, New York.
3. Tumors of the Breast. JABEZ N. JACKSON, Kansas City, Mo.
4. Classification, Diagnosis and Treatment of the Nephritides. MARTIN H. FISCHER, Cincinnati.
5. Infant Feeding. W. MCKIM MARRIOTT, St. Louis.
6. Endocrine Cases. WILLIAM ENGELBACH, St. Louis.
7. Stomach, Duodenum and Pelvic Cases. JOHN B. DEAVER, Philadelphia.
8. Anastomotic Circulation in Portal Obstruction. WILLIAM S. THAYER, Baltimore.
9. Glaucoma. WILLIAM CAMPBELL POSEY, Philadelphia.
10. Gallbladder and Malignancies of the Colon. JOHN F. ERDMAN, New York.
11. Chronic Myocarditis. HENRY A. CHRISTIAN, Boston.
12. Diagnosis and Indications for Treatment in Diseases of the Prostate. HUGH H. YOUNG, Baltimore.
13. Diabetes. ELLIOTT P. JOSLIN, Boston.
14. Orthopedic Clinic. ROYAL WHITMAN, New York.

FOREIGN GUESTS

The following distinguished physicians and surgeons from foreign countries will be Invited Guests at the Chicago Session: Dr. Leonard Findlay, Glasgow; Prof. Heinrich Finkelstein, Berlin; Prof. Karl Gramen, Stockholm; Dr. Harvey J. Howard, Peking; Dr. Louisa Martindale, London, and Dr. Claude Regaud, Paris. It is probable that other distinguished foreign guests will be present.



SOME CHICAGO HOTELS

UPPER LEFT: HOTEL MORRISON. UPPER RIGHT: HOTEL PEARSON. LOWER LEFT: LAKE SHORE DRIVE HOTEL. LOWER RIGHT: NEW HOTEL SHERMAN.

CHICAGO HOTELS

The following list includes the principal hotels of Chicago, but is not intended as a list of all the city's good hotels. The "Central Group" includes hotels located between Twenty-Second Street on the South and Oak Street on the North, with all the principal hotels in Chicago's famous "Loop"—the business and shopping center of the city. The largest of the hotels listed in the "Northern Group" and the "Southern Group" are located on or near Lake Michigan.

The number of rooms given with this list for each hotel does not represent the capacity, but the number of rooms available for the week of the session.

Chicago has many hotels, some of the largest and best of which are located in outlying parts of the city. Those who prefer to be in the center of the business life of the city, close to theaters and big department stores, can secure accommodations in hotels in the Loop. Those who prefer to be somewhat removed from the noise and bustle of business streets can make reservations at hotels from six to fifteen blocks from the Loop. Any who wish to be entirely away from the hum of the city's traffic can find accommodation equal to the best in some of Chicago's finest hostelries located from 3 to 6 or 8 miles from the center of the city.

The Committee on Hotels of the Local Committee on Arrangements will take pleasure in helping Fellows and visitors to secure desirable accommodations. Dr. Frank Morton, Chairman of the Committee on Hotels, can be addressed at Room 1522, 25 East Washington Street, Chicago. It is important that reservations be made at the earliest possible time. The committee will try to secure reservations at hotels preferred by applicants, but when this is not possible will endeavor to make satisfactory arrangements elsewhere. It is requested that those who write for reservations will designate first, second and third choice of hotels. In writing for reservations be careful to state the time of expected arrival, specify just what kind of accommodations are wanted, whether single or double room, with bath or without bath, and the price it is desired to pay.

CENTRAL GROUP

Hotel and Address	Rates			
	Without Bath		With Bath	
	Single	Double	Single	Double
Atlantic—200 rooms. Clark St. near Jackson Blvd.	$2.00 up	$3.00 up	$3.00 up	$4.00 up
Auditorium—200 rooms. Michigan Blvd. & Congress St.	3.00 up	4.00 up	4.50 up	6.00 up
Blackstone—300 rooms. Michigan Blvd. & Seventh St.	4.00 up	5.00 up	5.00 up	6.00 up
Brevoort—100 rooms. 120 W. Madison St.	2.50 up	4.00 up	3.50 up	4.50 up
Briggs—50 rooms. Randolph & Wells St.	.....	.....	2.50 up	4.00 up
Congress—200 rooms. Michigan Blvd. & Congress St.	3.00 up	5.00 up	5.00 up	7.00 up
Drake—200 rooms. Michigan Blvd. & Lake Shore Drive	.....	.....	4.00 up	6.00 up
Fort Dearborn—200 rooms. La Salle & Van Buren Sts.	2.50 up	3.50 up	3.00 up	4.00 up
Grant—50 rooms. Dearborn & Madison Sts.	1.50 up	3.00 up	2.00 up	4.00 up
Great Northern—200 rooms. Jackson, Dearborn & Quincy Sts.	2.50 up	4.00 up	3.50 up	6.00 up
Lake Shore Drive Hotel. 187 Lake Shore Drive	.....	.....	5.00 up	7.00 up
La Salle—600 rooms. Madison & La Salle Sts.	2.50 up	4.00 up	4.00 up	6.00 up
Lexington—200 rooms. Michigan Blvd. & 22d St.	2.00 up	3.00 up	3.00 up	4.00 up
Lorraine—25 rooms. 417 S. Wabash Ave.	.....	.....	2.50 up	3.50 up
Majestic—40 rooms. Quincy, bet. State & Dearborn Sts.	2.00 up	3.50 up	2.50 up	5.00 up
Metropole—75 rooms. Michigan Blvd. & 23d St.	2.00 up	3.00 up	3.00 up	4.00 up
Morrison—400 rooms. Clark & Madison Sts.	3.00 up	5.00 up	4.00 up	6.00 up
New Southern—100 rooms. Michigan Blvd. & 13th St.	2.00 up	3.50 up	3.00 up	5.00 up
Pearson—100 rooms. 190 E. Pearson St.	.....	.....	4.00 up	6.00 up
Planters—75 rooms. Clark & Madison Sts.	2.50 up	3.50 up	3.00 up	4.00 up
Plaza—25 rooms. North Ave. & Clark St.	.....	.....	2.50 up	3.50 up
Sherman—700 rooms. Clark & Randolph Sts.	3.50 up	.....	4.00 up	6.00 up
Virginia—50 rooms. Rush & Ohio Sts.	.....	.....	3.00 up	4.00 up

NORTHERN GROUP

Ambassador—100 rooms. State & Goethe Sts.	.....	.....	.....	3.50 up
Belmont—350 rooms. 3100 Sheridan Road	.....	.....	5.00 up	6.00-8.00
Edgewater Beach—600-800 rooms. 5300 Block Sheridan Road	.....	.....	4.00 up	7.00 up
Lott Hotels—400 rooms. Belden—2300 Lincoln Park West Parkway—Lincoln Park West at Garfield Webster—Lincoln Park West at Webster	.....	.....	4.00	5.00
Melbourne—50 rooms. 4625 N. Racine Ave.	.....	.....	3.00 up	4.00 up
Montezuma Lodge—10 rooms. 908 Windsor Ave.	2.50 up	3.50 up	3.50 up	4.50 up
Plymouth—75 rooms. 4700 Broadway	2.00 up	3.00 up	3.00 up	5.00 up
Sheridan Broadway—300 rooms. Sheridan Road at Broadway	.....	.....	.....	3.00 up
Sheridan Plaza—150 rooms. Sheridan Road at Wilson Ave.	.....	.....	3.00 up	4.50 up
Somerset—75-100 rooms. Sheridan Road at Argyle	.....	.....	5.00 up	6.00 up
Sovereign—150 rooms. Kenmore at Granville	.....	.....	.....	4.00 up
Surf—100 rooms. Surf at Pine Grove Ave.	.....	.....	4.00 up	7.00 up

SOUTHERN GROUP

Chicago Beach—250 rooms. Hyde Park Blvd. at 51st St.	3.00 up	4.00 up	4.00 up	5.00 up
Cooper-Carlton—365 rooms. Hyde Park Blvd. at 53d St.	.....	.....	3.00	3.50
Del Prado—125 rooms. 59th & Blackstone	2.50 up	.....	3.50 up	5.00 up
Drexel Arms Hotel—30 rooms. Drexel & Oakwood Blvd.	2.00	2.50	3.00	4.00
East End Park—315 rooms. Hyde Park Blvd. at 53d St.	.....	.....	4.00	5.00
Gladstone—10 rooms. 62d St. & Kenwood Ave.	2.00 up	2.50 up	3.00 up	3.50 up
Hayes Hotel—414 rooms. 6345 University Ave.	1.50	2.50	2.50	3.50
Hyde Park—300 rooms. Hyde Park Blvd. & Lake Ave. American Plan, $2.00 additional per person, per day.	2.50	4.00	3.00	4.50
Lakota Hotel—125 rooms. 30th & Michigan	.....	.....	2.00 up	3.00 up
Madison Park Hotel—322 rooms. Hyde Park Blvd. at Dorchester Ave.	.....	.....	3.50	5.00
Plaisance Hotel—240 rooms. On Midway Plaisance at Jackson Park	.....	.....	4.00	6.00
Sisson—280 rooms. Hyde Park Blvd. at 53d St.	.....	.....	5.00	7.00
Southmoor Hotel—528 rooms. Stony Island Ave. at 67th St.	.....	.....	3.00	3.50
South Shore—68 rooms. Hyde Park Blvd. at Harper Ave.	3.00	4.50	5.00	6.50
South Shore View—336 rooms. South Shore Drive at 71st St.	.....	.....	8.00	10.00
Strand Hotel—138 rooms. Cottage Grove Ave. & 63d St.	2.00	3.50	3.00	4.50
Trenier Hotel—25-30 rooms. 409 Oakwood Blvd.	.....	.....	3.00	3.50 up
Wedgewood Hotel—178 rooms. Woodlawn Ave. at 64th St.	.....	.....	3.00	4.50
Windermere East—653 rooms. Cornell Ave. at 56th St.	.....	.....	5.00	7.00
Windermere West—220 rooms. Cornell Ave. at 56th St.	.....	.....	3.50	5.00

ALUMNI ASSOCIATIONS AND FRATERNITIES

Special Group Dinners

Dinners for special groups—alumni associations, college fraternities and others—will be on Wednesday, June 11. Officers of these groups should communicate at once with Dr. Hugh N. MacKechnie, chairman of the Committee on Entertainment, 25 East Washington St., Chicago, concerning their meetings, dinners and other entertainments.

Luncheon Alumni of University of Nebraska

There will be a luncheon for alumni of the University of Nebraska College of Medicine at the Hamilton Club at 12:30 p. m., Wednesday, June 11. Reservations can be made through Dr. I. S. Trostler, 25 East Washington St., Chicago.

Reunion of Class of '04 of University of Nebraska

The twentieth year reunion of the class of '04 of the University of Nebraska College of Medicine will be held at the Hamilton Club. Dr. I. S. Trostler, 25 East Washington St., Chicago, will be in charge of arrangements.

MEETING PLACES AND GENERAL HEADQUARTERS

HOUSE OF DELEGATES: Assembly Hall, fifth floor of American Medical Association Building, 535 North Dearborn Street.

GENERAL MEETING: Auditorium Theater, corner Wabash Avenue and Congress Street.

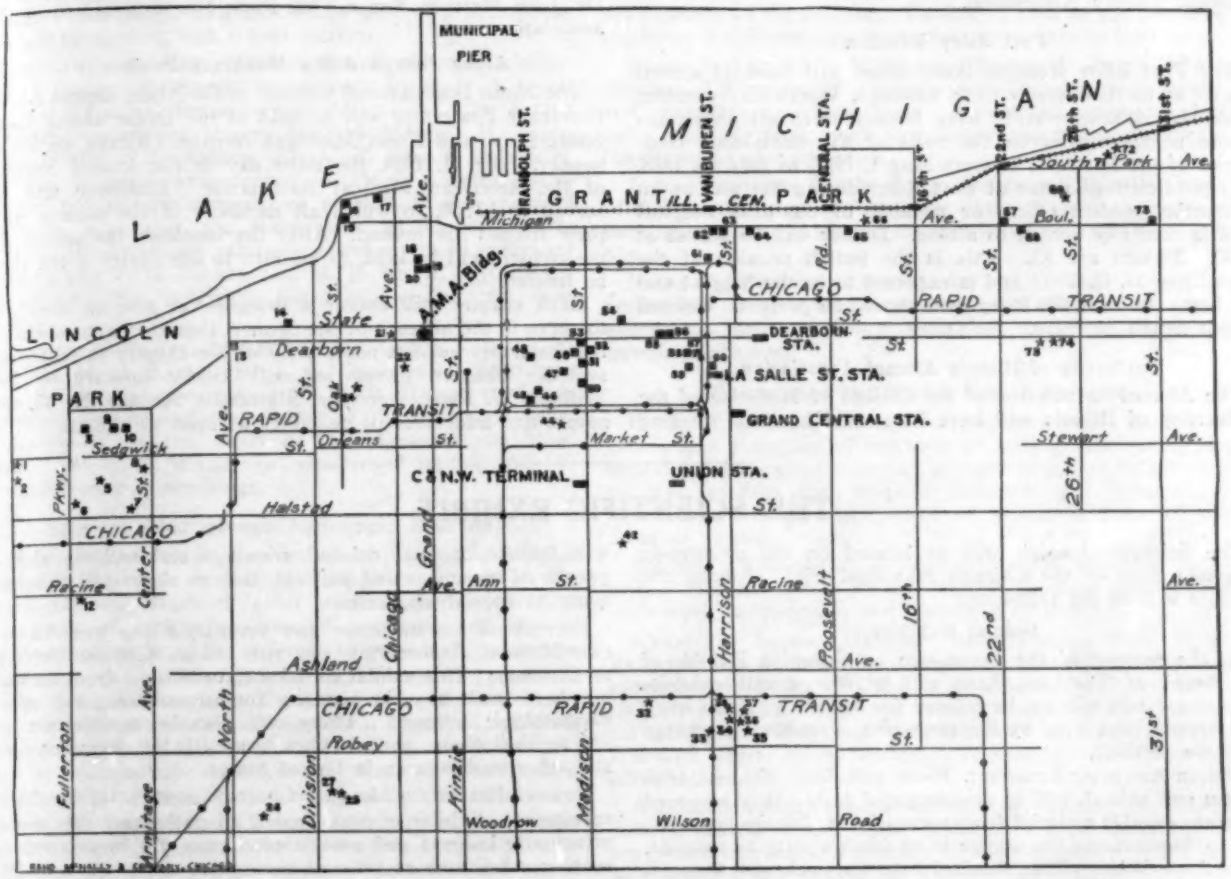
ALL SECTIONS OF THE SCIENTIFIC ASSEMBLY: Municipal Pier, end of Grand Avenue at Lake Michigan.

MOVING PICTURE THEATER: Municipal Pier.

DIAGNOSTIC CLINICS: Municipal Pier.

GENERAL HEADQUARTERS: SCIENTIFIC EXHIBIT, REGISTRATION BUREAU, COMMERCIAL EXHIBIT, INFORMATION BUREAU, ASSOCIATION BRANCH POSTOFFICE: Municipal Pier.

PRESIDENT'S RECEPTION: Drake Hotel.



KEY TO MAP

HOTELS (Indicated by squares)

No.	Hotels	Location
20	Alexandria	542 Rush St.
14	Ambassador	N. State and Goethe Sts.
58	Atlantic	316 S. Clark St.
62	Auditorium	S. Mich. Ave. and Congress St.
3	Belden	2300 Lincoln Parkway
46	Bismarck	175 W. Randolph St.
64	Blackstone	S. Mich. Ave. and 7th St.
59	Board of Trade	321 S. LaSalle St.
19	Bradley	Rush St. and Grand Ave.
51	Brevoort	120 W. Madison St.
45	Briggs	188 W. Randolph St.
63	Congress	S. Mich. Ave. and Congress St.
15	Drake	140 E. Walton Pl.
60	Fort Dearborn	LaSalle and Van Buren Sts.
53	Grant	6 N. Dearborn St.
56	Great Northern	Dearborn St. and Jackson Blvd.
16	Lake Shore Drive	180 Lake Shore Drive
73	Lakota	30th St. and S. Mich. Ave.
50	LaSalle	LaSalle and Madison Sts.
67	Lexington	22d and S. Mich. Ave.
61	Lorraine	417 S. Wabash Ave.
55	Majestic	29 Quincy St.
68	Metropole	23d and S. Mich. Ave.
52	Morrison	Clark and Madison Sts.
65	New Southern	13th St. and S. Mich. Ave.
54	Palmer House	Monroe and State Sts.
10	Parkway	Lincoln Parkway and Garfield Ave.
17	Pearson	190 East Pearson St.
49	Planters	19 N. Clark St.
13	Plaza	North Ave. and North Clark St.
48	Sherman	Clark and Randolph Sts.
57	Victoria	Clark and Van Buren Sts.
18	Virginia	Rush and Ohio Sts.
47	Washington	167 W. Washington St.
9	Webster	Lincoln Park West and Webster Ave.

HOSPITALS (Indicated by stars)

No.	Hospitals	Location
12	Alexian Brothers	1200 Belden Ave.
8	Augustana	2043 Cleveland Ave.
44	Chicago Eye, Ear, Nose and Throat	235 W. Washington St.
71	Chicago Memorial	2814 Ellis Ave.
21	Chicago Policlinic	221 W. Chicago Ave.
6	Children's Memorial	735 Fullerton Ave.
1	Columbus	2548 Lake View Ave.
36	Cook County	W. Harrison and S. Wood Sts.
37	Durand (McCormick Institute)	637 S. Wood St.
5	Grant Hospital of Chicago	551 Grant Pl.
24	Henrotin Memorial	939 N. La Salle St.
42	Illinois Charitable Eye and Ear Infirmary	904 W. Adams St.
69	Mercy	2537 Prairie Ave.
2	North Chicago	2551 N. Clark St.
27	Norwegian Lutheran Deaconess	1138 N. Leavitt St.
22	Passavant Memorial	149 W. Superior St.
75	Post-Graduate	2400 S. Dearborn St.
38	Presbyterian	1753 Congress St.
72	Reese, Michael	S. 29th St. and Ellis Ave.
26	St. Elizabeth's	1433 N. Claremont Ave.
7	St. Joseph's	2100 Burling St.
66	St. Luke's	1439 S. Michigan Ave.
28	St. Mary's of Nazareth	1120 N. Leavitt St.
32	Thompson, Mary	1712 W. Adams St.
33	University	432 S. Lincoln St.
74	Wesley Memorial	2449 S. Dearborn St.
34	West Side	1850 W. Harrison St.
35	Willard, Frances E.	710 S. Lincoln St.

NONAFFILIATED ORGANIZATIONS

The following organizations have announced meetings to be held in Chicago during the days immediately preceding or following those on which the sections of the Scientific Assembly will meet: the Medical Women's National Association; the Radiological Society of North America; American Radium Society; American Society of Tropical Medicine; Associated Anesthetists of the United States and Canada; Medical Library Association.

Fort Riley Reunion

The Fort Riley Reunion Association will hold its annual dinner at the University Club, Chicago, Wednesday evening, June 11. Announcements have been sent to all physicians whose names appear on the rolls of the thirty-four companies of the M. O. T. C. from May 1, 1917, to July 15, 1918. Any physician who was at Fort Riley during the war as an instructor, student officer or member of the base hospital staff is cordially invited to attend. Dinner will be served at 7:30. Tickets are $3. This is the fourth reunion of the Fort Riley M. O. T. C. and is expected to be the biggest and the best. At least 400 Riley men should be present. Colonel Bispham will be there.

University of Illinois Alumni Association

The Alumni Association of the College of Medicine of the University of Illinois will have its annual business meeting at the College on Wednesday afternoon, June 11. Those present will be conducted through the new buildings, after which the business of the Alumni Association will be transacted. At 6:30 p. m. the alumni banquet will be spread at the Sherman Hotel, after which the annual memorial address will be heard and other enjoyable features will be provided. The name of the principal speaker will be announced later. Dr. John Matthew Krasa, Oak Park, Ill., is president of the association.

Alpha Omega Alpha Honorary Fraternity

The Ninth International Council of the Alpha Omega Alpha Honorary Fraternity will be held at the Drake Hotel, Lake Shore Drive and Upper Michigan Avenue, Chicago, on Wednesday, June 11, 1924, the third day of the Annual Session of the American Medical Association. Luncheon will be served at 12:30, to which all members of the society with their friends are invited. After the luncheon the session of the council will be held, to adjourn to meet later if the time be limited.

Each chapter will choose a delegate, as also an alternate to serve in the absence of the former, these to be members of the fraternity but not necessarily of the chapter to be represented. Chapter secretaries will kindly forward to Dr. William W. Root, secretary, Slaterville Springs, N. Y., the names and addresses of delegates as soon as chosen.

THE SCIENTIFIC EXHIBIT

The Scientific Exhibit will be located on the promenade (second) floor of the Chicago Municipal Pier. Among the exhibits will be the following:

Special Exhibits

At the request of the Committee on Scientific Exhibit of the Board of Trustees, there will be two special exhibits. (These exhibits will not be entered for awards.) Much work has already been done by the respective committees in charge of these exhibits.

MORBID ANATOMY EXHIBIT: Fresh pathologic material, both human and animal, will be demonstrated daily. It is proposed to secure suitable material from necropsies in Chicago hospitals, and to demonstrate the organs in as fresh a state as possible. Animal specimens will be obtained from the stockyards through the cooperation of the Bureau of Animal Industry. The undertaking is in charge of the following Chicago pathologists: Lloyd Arnold, D. J. Davis, L. E. Day (Bureau of Animal Industry), Ludvig Hektoen, E. F. Hirsch, E. R. LeCount, J. J. Moore, O. T. Schultz, J. P. Simonds, Harry Singer, H. C. Sweeney, and H. G. Wells; Dr. Ludvig Hektoen is chairman of the committee, and Dr. S. M. Crowe will have charge of demonstrations.

MODERN METHODS OF HEART STUDY: It is proposed to have an anatomic, pathologic and clinical heart exhibit; specimens showing valve and heart muscle derangements; clinical demonstration of selected patients; also instrumental and technical exhibit with demonstration of cardiographic records of visiting physicians as may be desired; demonstration of cardiac conductive system. In connection with the exhibit there will be lectures on heart study in the Motion Picture Theater. The committee in charge is composed of: Dr. George Blumer, New Haven, Conn.; Dr. Alexander Lambert, New York, chairman, and Dr. S. Calvin Smith, Philadelphia.

Pathologic Exhibits

CLYDE BROOKS, University, Alabama: Clinical measurement of blood pressure. Exhibit of model of circulation; model showing behavior of brachial artery when compressed by arm band in clinical blood pressure measurements and mechanism of production of sounds of Karatkov; charts showing Karatkov's sounds as per original translation of his work; also charts showing other sounds not noted by Karatkov.

CLEVELAND CLINIC GROUP, Cleveland: Drs. Crile, Brunts, Lower, Belcher, Phillips, Anderson, John, Kimball, Dickson, Waugh, Netherton, Nichols, Jones, Fricke. The exhibit will include original colored drawings and technic, photographs of specimens and patients, lantern slides and illustrations of special apparatus.

SECTION ON DERMATOLOGY AND SYPHILOLOGY OF THE AMERICAN MEDICAL ASSOCIATION AND THE DERMATOLOGICAL SOCIETY OF CHICAGO: This exhibit contains contributions from various members, such as skin pictures, fungus cultures, and other dermatologic material. There will also be a collection of old medical books and sketches from life of dermatologists and other medical men in United States.

EDWIN HIRSCH, Chicago: Clinical models of urologic specimens. Exhibit of wax models of pathologic specimens, principally kidneys and associated organs, the models representing conditions at time of necropsy.

MAYO CLINIC AND MAYO FOUNDATION, GROUP, Rochester, Minn.: (1) R. D. CARMAN: Roentgenograms depicting gallstones and shadows of the gallbladder; (2) S. H. MENTZER: Pathology of the gallbladder. Exhibit of a collection of the various types of pathologic gallbladders with their contents as secured from operative and necropsy specimens; (3) W. J. MARQUIS: An experimental roentgenologic study of bronchial and vascular pulmonary markings; (4) M. S. MEYERDING: A collection of gross and microscopic specimens of giant cell tumors of the long bones; (5) E. H. HARGIS: A. A study of the development and healing of duodenal ulcers. B. Studies in variation and volume of the spleen; (6) E. L. JUDAH: A demonstration of museum technic.

DEPARTMENT OF PATHOLOGY, RUSH MEDICAL COLLEGE, Chicago: Exhibit of museum preparations illustrating lesions of central nervous system.

GEORGE E. SHAMBAUGH, Chicago: Researches in the anatomy of the ear and nasal sinuses. Exhibit (1) of blood supply of internal ear in pig, sheep, calf, dog and man; (2) demonstrating blood vessel connections between bony capsule of labyrinth and membranous internal ear; (3) demonstration of the origin of cells forming stria vascularis; (4) epithelium in the sulcus spiralis externis; (5) relations of membrana tectoria to hair cells; (6) structure of the end-organs in the semicircular canals; (7) study in the anatomy of the basilar membrane; (8) Wood's metal casts of the labyrinth; (9) investigations into the structure of the nasal accessory sinuses; (10) study in the surgical anatomy of the temporal bone; (11) series of enlarged photomicrographs, showing histology of the end-organs of the labyrinth.

DAVID C. STRAUS, Chicago: Cholecystitis and cholelithiasis. Exhibit of pathologic gallbladders, with and without gallstones, illustrating various types of diseases and stones; also specimens showing kinks of the cystic duct at its origin from the neck of the gallbladder.

BENJAMIN T. TERRY, Vanderbilt School of Medicine, Nashville, Tenn.: Surgical specimens from the department of pathology; exhibit of gross pathologic specimens showing common as well as unusual lesions; also of a new method for provisional microscopic diagnosis made without a microtome, which will be checked with frozen sections.

UNIVERSITY OF ILLINOIS MEDICAL SCHOOL GROUP, Chicago: (1) D. J. DAVIS, coccidiosis; (2) ISADORE PILOT, D. J. DAVIS and JULUIS BRAMS, fusospirochete infections; (3) JULIUS BRAMS, studies on the Ducrey bacillus; (4) R. H. JAFFE, arteriosclerosis of the kidney; (5) V. E. EMMEL and M. H. STREICHER, lactation leukopenia; (6) V. E. EMMEL, nonnucleated cytoplasmic elements or plastids in the blood of vertebrates, apparatus for preparation of blood smears; (7) H. L. WEATHERFORD, relation of leukocytes to mammary secretion; (8) V. E. EMMEL and M. E. FISCH, erythrocytic reticulation; (9) ANATOLE KOLODNY, studies in bone pathology.

UNIVERSITY OF KANSAS MEDICAL SCHOOL GROUP, Kansas City, Kan.: (1) H. R. HADEN and T. G. ORR, charts illustrating studies in intestinal obstruction; (2) H. R. HADEN, studies in the volume and hemoglobin content of the red blood cells; (3) RALPH H. MAJOR, effect of methylguanidin on blood pressure; (4) H. R. WAHL: (*a*) cholesterol feeding and (*b*) alternia infection in the lungs.

Surgical, Medical and Radiologic Exhibits

C. LATIMER CALLANDER, University of California Medical School, San Francisco, and C. N. CALLANDER, Fargo, N. D.: Surgical anatomic illustrations for teaching purposes; exhibit of drawings of surgically dissected specimens and also of stages in development of the abdominal viscera and peritoneum.

CHICAGO LYING-IN HOSPITAL GROUP, Chicago: Technic of Chicago Lying-In Hospital. Exhibit showing the dispensary technic, special instruments and apparatus employed; placards stating prenatal and postnatal statistics; also pictures and slides in transparency roentgen-ray films in shadow-box. Placards showing special operation and special technic.

DANIEL N. EISENDRATH, Chicago: Surgery of the urinary tract; exhibit of lantern slides illustrating congenital anomalies of upper urinary tract, mounted specimens and papier maché models.

DEPARTMENT OF SURGICAL PATHOLOGY, RUSH MEDICAL COLLEGE (by D. B. PHEMISTER), Chicago: Bone tumors. Exhibit of pathologic specimens; also comparative lantern slides and roentgen-ray records.

HUGH YOUNG and D. M. DAVIS; V. M. FORTUNATO; W. P. DIDUSCH; CHARLES F. ELVERS; MARY A. GOLDTHWAITE, Baltimore: Teaching of surgery with models, drawings, anatomic and pathologic specimens transported on special movable carriage. Exhibit of a series of models made from cases before, during and after operation, made in light weight indestructible material so as to be transportable to ward for bedside teaching; also specimens, charts and figures on movable carriage.

ANTHONY BASSLER, New York: Pancreatic digestion test. Exhibit of photomicrographs, photographs and table statistics.

W. W. DUKE, Kansas City, Mo.: Allergy. Exhibit of pollens, photographs and also demonstration of tests.

J. C. GAMBLE and PAUL D. WHITE, Boston: Electric amplifier stethoscope provided with electrical filters and phonograph record of heart murmurs and lung sounds. Exhibit of a three stage electrical amplifier with transmitter to be applied against patient's chest, and twelve receivers against which listener's own stethoscope is applied. Patients with heart and lung sounds will be available; also phonographic records of heart and lung sounds of special interest.

JULIUS H. HESS, Chicago: "Premature Infant Station." Exhibit of equipment required for their care in a general hospital and demonstration of their nursing and feeding care.

AMÉDÉE GRANGER, New Orleans: Position for making roentgenograms of the paranasal sinuses. Exhibit of photographs and roentgenograms and skulls illustrating the position for making roentgenograms of paranasal sinuses; the remarkable similarity of these roentgenograms made of different shaped heads and skulls; the important anatomic landmarks seen in them; and their superior value in the diagnosis of diseases of these sinuses, especially the sphenoid.

P. M. HICKEY, Ann Arbor, Mich.: (*a*) Ventriculograms. Exhibit of ventriculograms of operative cases, with short clinical history of each case. (*b*) Roentgen-ray studies in the development of the skeleton. Exhibit of films of the principal epiphyses at different ages from their appearance to final union.

ROBERT H. IVY and L. M. ENNIS, Thomas W. Evans Dental Institute, University of Pennsylvania, Philadelphia: Dental and maxillary roentgenograms. Exhibit of intra-oral and extra-oral roentgenographic films illustrating various pathologic conditions of jaw and teeth.

J. S. PRITCHARD, Battle Creek Sanitarium, Battle Creek, Mich.: Lateral roentgen-ray chest films. Exhibit of fourteen interesting cases of thoracic abnormalties found by use of this film.

IRVING F. STEIN and ROBERT A. ARENDS, Chicago: Pneumoperitoneum in gynecology and obstetrics. Exhibit of roentgenograms depicted by transuterine and transabdominal pneumoperitoneum.

Educational and Public Health Exhibits

HERMAN A. ADLER, Chicago: Orthopsychiatry. Exhibit of charts and a display of methods of testing, illustrating the treatment of behavior disorders and prevention of delinquency by the Institute for Juvenile Research and Division of Criminology of the Department of Public Welfare of the State of Illinois.

AMERICAN ASSOCIATION OF HOSPITAL SOCIAL WORKERS, Baltimore. Hospital social work. Exhibit showing influence of such work in diagnosis and treatment of patients.

AMERICAN SOCIAL HYGIENE ASSOCIATION, New York: Researches in the diagnosis and treatment of syphilis and gonococcal infection. Exhibit of pathologic specimens, bacterial cultures and slides, photographs, photomicrographs, statistical tables, etc., illustrated by work done at Johns Hopkins, Harvard, University of Michigan, Washington University and other colleges.

AMERICAN SOCIETY FOR THE CONTROL OF CANCER, New York: General aspects of the cancer problem. Exhibit detailing the prevalence of cancer in relation to other causes of death and as it appears in different parts of the body; early symptoms and necessity for prompt diagnosis and treatment.

ASSOCIATION FOR PREVENTION AND RELIEF OF HEART DISEASE, New York: Exhibit of charts, descriptive of the preventive problems, value of organized care, educational facilities and development, to date.

CONFERENCE OF FOREIGN MISSION BOARDS OF NORTH AMERICA, New York: Medical missions exhibit. Posters, charts, literature, books, specimens, illustrating medical missionary work.

WILLIAM J. DUBLIN, New York: Problems of life extension. Exhibit of charts of: (1) historical aspects of tuberculosis mortality and the outlook for the future; (2) extension of the life span in various geographic areas and for color and sex groups of the population; (3) progress and problems of mortality in infancy and childhood; (4) mortality problems of adult and middle life; (5) end-results of periodic health examinations; (6) public health nursing as a factor in life extension and in general public health work.

INDIANA CHILD HYGIENE (ADA E. SCHWEITZER), Indianapolis: Indiana child hygiene activities. Exhibit of charts, photographs and maps of state activities, county infant mortality rates, maternity and infancy surveys.

LEAGUE OF NATIONS, Geneva, Switzerland: Exhibit of types of health work done under the auspices of the League of Nations, such as combating typhus and other epidemics, international standards for serums, international enquiries on cancer, epidemiologic intelligence exchange, etc.

MEDICAL WOMEN'S NATIONAL ASSOCIATION, New York: Exhibit of photographs, pamphlets and bulletins, illustrating the work for public health, at home and in other countries which is being done by the committee of the Association.

NATIONAL BOARD OF MEDICAL EXAMINERS, Philadelphia: Exhibit of maps, charts and statistics showing details of the activities and program of the National Board of Medical Examiners.

PLAYGROUND AND RECREATION SOCIETY OF AMERICA, Chicago: Community recreation. Exhibit of photographs, charts, posters, etc., dealing with recreation subjects.

U. S. DEPARTMENT OF AGRICULTURE, Washington, D. C.: Pasteur exhibit. Pasteur's studies on chicken cholera, anthrax and rabies, consisting of the types of glassware used by Pasteur, together with cultures of the micro-organisms used in his studies in these diseases.

U. S. DEPARTMENT OF INTERIOR, BUREAU OF MINES, Washington and Pittsburgh: Exhibit of work of the bureau shown in photographs and transparencies, together with actual apparatus; also exhibit of other research of especial interest to physicians. A feature will be daily demonstrations of the prone-pressure and Schaefer method of resuscitation.

U. S. PUBLIC HEALTH SERVICE: Exhibit of work on tularemia and of the Hygienic Laboratory.

AMERICAN MEDICAL ASSOCIATION

COUNCIL ON PHARMACY AND CHEMISTRY: Cards and specimens illustrating the efforts of the Council in the interests of scientific medicine and rational prescribing. The methods by which the Council arrives at conclusions are explained.

THE AMERICAN MEDICAL ASSOCIATION CHEMICAL LABORATORY: Cards and specimens bearing on such subjects as the newer synthetics, comparative prices of proprietary and nonproprietary remedies, and drug control.

PROPAGANDA DEPARTMENT OF THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION: Exhibit of: (1) a series of educational posters; (2) specimens of pamphlets published for the purpose of furnishing information easily and quickly to the public, and (3) the two volumes of "Nostrums and Quackery."

COUNCIL ON MEDICAL EDUCATION AND HOSPITALS: Reliable information and statistics on all phases of medical education, licensure, reciprocity, hospitals, postgraduate courses and accredited internships. Also the hospital facilities of each community with special reference to Chicago and vicinity. Graphic charts and hand colored maps are employed to show facts at a glance.

BUREAU OF HEALTH AND PUBLIC INSTRUCTION: (1) Exhibit of charts on baby welfare, educational pamphlets and HYGEIA —the new journal of health for the public; (2) charts and pamphlets showing cooperative work of the National Education Association and the bureau.

MOTION PICTURE THEATER

The Motion Picture Theater will be located adjacent to the Scientific Exhibit. The Theater will open at noon on Monday and run continuously each day thereafter from 9 a. m. to 5:30 p. m., and until 4 p. m. on Friday. Each speaker will demonstrate the talk with either lantern slides or motion pictures.

FRED H. ALBEE, New York: Reconstruction surgery. Illustrated with slides and motion pictures.

JOSEPH BECK, Chicago: Pathology of nose and throat. Illustrated with slides.

HUGH CABOT, Ann Arbor, Mich.: Stone in kidney or ureter. Illustrated with slides.

WILLIAM B. COLEY, New York: Diagnosis and treatment of sarcoma of the long bones. Illustrated with lantern slides.

HENRY A. COTTON, Trenton, N. J.: Treatment of mental disorders. Illustrated with motion pictures.

ARTHUR J. CRAMP, Director, Bureau of Investigation, THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION: (1) Albert Abrams and his Vagaries; (2) The Nostrum and the Public Health. Illustrated with lantern slides.

JOSEPH B. DE LEE, Chicago: Normal labor and breech. Illustrated with motion pictures.

A. U. DESJARDINS, Rochester, Minn.: Hodgkin's disease and lymphosarcoma, with special reference to mediastinal involvement. Illustrated with lantern slides.

REX L. DIVELY and FRANK D. DICKSON, Kansas City, Mo.: Infantile paralysis. Illustrated by motion pictures.

CHARLES P. EMERSON, Indianapolis: Physical diagnosis of the diseases of the chest. Illustrated with lantern slides.

C. J. GAMBLE and PAUL D. WHITE, Boston: Demonstration of heart sounds and murmurs and of pulmonary sounds by the electric stethoscope. Note: Physicians must bring their own stethoscopes; attendance limited to 500 at each demonstration.

FRANKLIN PAUL GENGENBACH, Denver: Faulty posture and malnutrition in children. Illustrated with lantern slides.

S. PHILLIP GOODHART, New York: Residua and sequelae of epidemic encephalitis and other forms of nervous diseases. Illustrated with motion pictures and slow motion pictures.

HARRY S. GRADLE, Chicago: Pupillary reaction. Illustrated with motion pictures.

CARL A. HEDBLOM, Rochester, Minn.: Differential diagnosis and treatment of pulmonary suppuration. Illustrated with lantern slides.

E. P. JOSLIN, Boston: Diabetes and insulin. Illustrated with lantern slides.

WILLS MACLACHLAN: Resuscitation, prone-pressure method. Illustrated with motion pictures.

RUDOLPH MATAS, New Orleans: On the surgical treatment (technic) of arterial and arteriovenous aneurysms by the methods of intrasaccular suture (endo-aneurysmorrhaphy). Illustrated with lantern slides.

HENRY MEYERDING, Rochester: Radiologic findings in bone tumors. Illustrated by lantern slides.

D. B. PHEMISTER, Chicago: Bone tumors. Illustrated by lantern slides.

G. ALLEN ROBINSON, New York: Radium therapy. Illustrated with animated motion pictures.

R. W. RYERSON, Chicago: Orthopedic surgery for the general practitioner. Illustrated with lantern slides.

R. R. SAYERS, Washington, D. C.: (1) Dust that kills; illustrated with motion pictures; (2) atmospheric changes affecting man; illustrated with lantern slides.

C. J. STAUFFACHER, Sioux City, Iowa: Leprosy in Africa and Asia. Illustrated with slides.

ABRAHAM ZINGHER, New York: (1) Diphtheria toxin-antitoxin and the Schick test. Illustrated with motion pictures. (2) The Dick test for scarlet fever susceptibility. Illustrated by lantern slides and demonstrations.

AMERICAN SOCIETY FOR THE CONTROL OF CANCER: Motion picture film, "The Cancer Problem Filmed for Physicians."

AMERICAN SOCIAL HYGIENE ASSOCIATION: Motion picture films: (*a*) stimulating interest in the control of venereal disease; (*b*) an efficient arrangement for a small town clinic.

INDIANA STATE BOARD OF HEALTH: Motion Picture Films: "Through Life's Windows"; "Your Mouth"; talk by Dr. Ada E. Schweitzer.

MEDICAL WOMEN'S NATIONAL ASSOCIATION, New York: Dr. Esther Lovejoy: "Work of the American Women's Hospitals in Greece, Macedonia, and Russia." Illustrated with motion pictures.

METROPOLITAN LIFE INSURANCE COMPANY: Motion picture film, "Working for Dear Life"; talk by Dr. L. J. Dublin.

UNITED STATES DEPARTMENT OF AGRICULTURE: Motion picture film, "Pasteur."

UNITED STATES DEPARTMENT OF LABOR, CHILDREN'S BUREAU: Motion picture film, "Well Born"; talk by Dr. Florence Kraker.

UNITED STATES PUBLIC HEALTH SERVICE: Motion picture film, "Science of Life."

HEART STUDY TALKS: The committee in charge of the exhibit on modern methods of heart study has arranged for three talks: (1) methods of examining cardiac patients; (2) modern conceptions of the anatomy and physiology of the heart; (3) significance of arrhythmias. Illustrated with lantern slides and motion pictures. The committee has not announced the names of the speakers.

PRELIMINARY PROGRAM OF THE SCIENTIFIC ASSEMBLY

PROGRAM OF THE OPENING MEETING

Tuesday, June 10—8:30 p. m.

Music.

Call to Order by the President, RAY LYMAN WILBUR, Stanford University, Calif.

Invocation. REV. JOHN TIMOTHY STONE.

Announcements. J. WARREN VAN DERSLICE, Chairman, Local Committee on Arrangements.

Address of Welcome. HON. WILLIAM E. DEVER, Mayor of Chicago.

Address of Welcome. L. C. TAYLOR, President, Illinois State Medical Society.

Address of Welcome. ARCHIBALD CHURCH, President, Chicago Medical Society.

Music.

Introduction and Installation of President-Elect WILLIAM ALLEN PUSEY, Chicago.

Address. WILLIAM ALLEN PUSEY.

Music.

THE PROGRAMS OF THE SECTIONS

Outline of the Scientific Proceedings—The Preliminary Program and the Official Program

The following papers are announced to be read before the various sections. The order here is not necessarily the order that will be followed in the Official Program, nor is the list complete. The Official Program will be similar to those issued in previous years, and will contain the final program of each section with abstracts of the papers, as well as lists of committees, programs of the General Meeting, lists of entertainments, map of Chicago, and other information. To prevent misunderstandings and to protect the interest of advertisers, it is here announced that this Official Program will contain no advertisements. It is copyrighted by the American Medical Association and will not be distributed before the session. A copy will be given to each Fellow on registration.

SECTION ON PRACTICE OF MEDICINE

MEETS ON MUNICIPAL PIER

OFFICERS OF SECTION

Chairman—JOSEPH A. CAPPS, Chicago.
Vice-Chairman—BRYCE W. FONTAINE, Memphis, Tenn.
Secretary—EUGENE S. KILGORE, San Francisco.
Executive Committee—LEWELLYS F. BARKER, Baltimore; NELLIS B. FOSTER, New York; JOSEPH A. CAPPS, Chicago.

Wednesday, June 11—2 p. m.

1. The Principles Involved in the Treatment of Obesity. JAMES S. MCLESTER, Birmingham, Ala.
   Discussion to be opened by ROGER S. MORRIS, Cincinnati, and JAMES E. PAULLIN, Atlanta.
2. Indications for, and Methods of, Administering Hydrotherapy. JAMES M. ANDERS, Philadelphia.
   Discussion to be opened by JOSEPH H. PRATT, Boston.
3. What Has Been Accomplished in Twenty Years of Sanatorium Study and Treatment of Tuberculosis (Lantern Demonstration). F. M. POTTENGER, Monrovia, Calif.
   Discussion to be opened by LAWRASON BROWN, Saranac Lake, N. Y.
4. Studies in Diabetes Insipidus (Lantern Demonstration). L. G. ROWNTREE, Rochester, Minn.
   Discussion to be opened by REGINALD FITZ, Boston.
5. The Electric Stethoscope and Electrical Filters as Aids to Diagnosis.
   CLARENCE GAMBLE, Philadelphia, and RICHARD C. CABOT, Boston.
6. Hyperinsulinism: Preliminary Report. SEALE HARRIS, Birmingham, Ala.
7. "Optimal" Diabetic Diets (Lantern Demonstration). RUSSELL M. WILDER, Rochester, Minn.
8. The Present Problem in Diabetes. ELLIOTT P. JOSLIN, Boston.
   Discussion of Papers 6, 7 and 8 to be opened by R. T. WOODYATT, Chicago; F. M. ALLEN, New York, and W. M. BOOTHBY, Rochester, Minn.

Thursday, June 12—2 p. m.

9. Chairman's Address. JOSEPH A. CAPPS, Chicago.
10. Further Observations on Sickle Cell Anemia (Lantern Demonstration). V. P. SYDENSTRICKER, Augusta, Ga.
    Discussion to be opened by J. B. HERRICK, Chicago, and W. A. MULHERIN, Augusta, Ga.
11. The Value of Volume Index in the Diagnosis of Pernicious Anemia (Lantern Demonstration). RUSSELL L. HADEN, Kansas City, Mo.
    Discussion to be opened by H. C. GIFFIN, Rochester, Minn., and GEORGE R. MINOT, Boston.
12. Causes of Dyspepsia. JOHN M. BLACKFORD and M. F. DWYER, Seattle.
    Discussion to be opened by GEORGE B. EUSTERMAN, Rochester, Minn., and J. C. FLIPPIN, University, Va.
13. The Prevention of Scarlet Fever. GEORGE F. DICK, Chicago.
    Discussion to be opened by F. B. MALLORY, Boston.
14. Visceral Disease Due to Bacterial Infection of an Apparently Normal Upper Respiratory Tract. MYER SOLIS-COHEN, Philadelphia.
    Discussion to be opened by JUDSON DALAND, JOHN A. KILMER, ROBERT F. RIDPATH and S. DE W. LUDLUM, Philadelphia.
15. Experimental Studies on the Etiology of Chronic Ulcerative Colitis. J. A. BARGEN, Rochester, Minn.
    Discussion to be opened by E. C. ROSENOW, Rochester, Minn.

Friday, June 13—2 p. m.

Election of Officers

16. Clinical Types of Hypotension. ALFRED FRIEDLANDER, Cincinnati.
    Discussion to be opened by HARLOW BROOKS, New York, and STUART R. ROBERTS, Atlanta.
17. Relationship Between Certain Products of Metabolism and Arterial Hypertension (Lantern Demonstration). RALPH H. MAJOR, Kansas City, Kan.
    Discussion to be opened by NELLIS B. FOSTER, New York, and JOSEPH L. MILLER, Chicago.
18. Splenic Enlargement in Chronic Cardiac Disease. JAMES E. TALLEY, Philadelphia.
    Discussion to be opened by ROBERT B. PREBLE, Chicago.
19. Heart Failure of the Congestive Type Resulting from Hyperthyroidism (Lantern Demonstration). BURTON E. HAMILTON, Boston.
    Discussion to be opened by WALTER M. BOOTHBY, Rochester, Minn., and FRANK H. LAHEY, Boston.
20. The Incidence of Rheumatic Fever, Chorea and Rheumatic Heart Disease, with Especial Reference to Its Occurrence in Families (Lantern Demonstration). PAUL D. WHITE, Boston.
    Discussion to be opened by WILLIAM ST. LAWRENCE, New York.
21. The Cardiac Manifestations of Rheumatic Fever. W. S. THAYER, Baltimore.
    Discussion to be opened by EMANUEL LIBMAN and LEWIS A. CONNER, New York.

SECTION ON SURGERY, GENERAL AND ABDOMINAL

MEETS ON MUNICIPAL PIER

OFFICERS OF SECTION

Chairman—URBAN MAES, New Orleans.
Vice-Chairman—FRED W. BAILEY, St. Louis.
Secretary—J. TATE MASON, Seattle.
Executive Committee—WALLACE I. TERRY, San Francisco; EUGENE H. POOL, New York; URBAN MAES, New Orleans.

Wednesday, June 11—9 a. m.

1. Regional Anesthesia: Its Use in General Surgery (Lantern Demonstration). M. E. BLAHD, Cleveland.
2. A Method of Obtaining Anterior Sympathetic Anesthesia in Abdominal Surgery (Lantern Demonstration). ROBERT EMMETT FARR, Minneapolis.
   Discussion of Papers 1 and 2 to be opened by WILLIAM THOMAS COUGHLIN, St. Louis; WILLIAM R. MEEKER, Rochester, Minn., and JOHN B. MCNERTHNEY, Tacoma, Wash.

3. Oxids of Nitrogen in Wound Infections (Lantern Demonstration). W. O. SWEEK, Phoenix, Ariz.
Discussion to be opened by DAVID L. FLANARY, St. Louis, and WARNER W. WATKINS, Phoenix, Ariz.
4. Mobilization of Joints with Bony Ankylosis: An Analysis of One Hundred Cases (Lantern and Moving Picture Demonstration). WILLIS C. CAMPBELL, Memphis, Tenn.
5. Fracture of the Pelvis. ERNST A. SOMMER, Portland, Ore.
Discussion of Papers 4 and 5 to be opened by M. S. HENDERSON, Rochester, Minn.; WILLIAM RUSSELL MACAUSLAND, Boston; D. B. PHEMISTER, Chicago, and LLOYD NOLAND, Fairfield, Ala.
6. The Diagnosis and Management of Head Injuries. FRANCIS R. HOLBROOK, Des Moines.
Discussion to be opened by FREDERICK ATWOOD BESLEY and KELLOGG SPEED, Chicago, and GEORGE W. SWIFT, Seattle.
7. Suggestions as to the Treatment of Total Avulsion of the Scalp, with Remarks on Skin Grafting (Lantern Demonstration). CLARENCE A. MCWILLIAMS, New York.
8. The Repair of Defects about the Chin from the Standpoint of a General Surgeon (Lantern Demonstration). WILLIAM T. COUGHLIN, St. Louis.
Discussion of Papers 7 and 8 to be opened by HARRY P. RITCHIE, St. Paul; GORDON B. NEW, Rochester, Minn., and GEORGE V. I. BROWN, Milwaukee.

Thursday, June 12—9 a. m.

9. Chairman's Address. URBAN MAES, New Orleans.
10. Subcostal Neuritis as a Cause of Abdominal Pain (Lantern Demonstration). MARSHALL CLINTON, Buffalo.
Discussion to be opened by ALLEN B. KANAVEL, Chicago, and LEWIS H. MCKINNIE, Colorado Springs.
11. End-Results in Periarterial Sympathectomy (Lantern Demonstration). GEORGE P. MULLER, Philadelphia.
Discussion to be opened by ALBERT E. HALSTEAD, Chicago; E. A. CAMPBELL, New York, and C. L. CALLANDER, San Francisco.
12. Further Observations on the Treatment of Postoperative Vomiting, Distention, and Peritonitis by Continued Drainage and Lavage with the Duodenal Tube and Massive Hot Applications (Lantern Demonstration). W. L. BROWN, El Paso, Texas.
Discussion to be opened by THOMAS JOYCE, Portland, Ore.; MOSES BEHREND, Philadelphia, and THOMAS G. ORR, Kansas City.
13. Hypophysial Adenomas (Lantern Demonstration). PERCIVAL BAILEY, Boston.
14. Thyroid Gland (Lantern Demonstration). GEORGE W. CRILE, Cleveland.
15. Certain Blood Dyscrasias Dependent on Pathologic Condition of Spleen. WILLIAM J. MAYO, Rochester, Minn.
Discussion of Papers 13, 14 and 15 to be opened by A. J. CARLSON, Chicago; JOHN L. YATES, Milwaukee; W. D. HAGGARD, Nashville, Tenn., and EDWARD M. HANRAHAN, JR., Baltimore.

Friday, June 13—9 a. m.

Election of Officers

16. Congenital Arteriovenous Fistula: Discussion of Etiology and Operative Treatment, with Report of a Case (Lantern Demonstration). WILLIAM FRANCIS RIENHOFF, JR., Baltimore.
17. Five Cases of Subclavian Arteriovenous Aneurysm (Lantern Demonstration). MONT R. REID, Cincinnati.
Discussion of Papers 16 and 17 to be opened by BARNEY BROOKS, St. Louis, and RUDOLPH MATAS, New Orleans.
18. The Treatment of Blue Dome Cyst (Lantern Demonstration). EDWIN I. BARTLETT, San Francisco.
Discussion to be opened by JOSEPH C. BLOODGOOD, Baltimore; W. C. MACCARTY, Rochester, Minn., and FRANK E. ADAIR, New York.
19. Choice of Operation in Cancer of the Colon, Not Including the Rectum (Lantern Demonstration). FRED W. RANKIN, Louisville, Ky.
Discussion to be opened by E. STARR JUDD, Rochester, Minn., and CARL B. DAVIS, Chicago.
20. Diverticulitis of Sigmoid (Lantern Demonstration). CASPER W. SHARPLES, Seattle.
Discussion to be opened by ARTHUR D. BEVAN, Chicago; LUCIUS E. BURCH, Nashville, and COLLIER F. MARTIN, Philadelphia.
21. The Case Against Gastro-Enterostomy. DONALD C. BALFOUR, Rochester, Minn.
Discussion to be opened by JOHN S. HORSLEY, Richmond, Va.; JOHN B. DEAVER, Philadelphia, B. W. SIPPY, Chicago, and R. C. COFFEY, Portland, Ore.
22. Primary Carcinoma of the Gallbladder (Lantern Demonstration). STEPHEN H. WATTS, Charlottesville, Va.
23. Cholecystectomy Versus Cholecystostomy (Lantern Demonstration). JOHN B. DEAVER, Philadelphia.
Discussion of Papers 22 and 23 to be opened by LE ROY LONG, Oklahoma City; JABEZ N. JACKSON, Kansas City, Mo.; DEAN LEWIS, Chicago, and FRED W. BAILEY and DUFF ALLEN, St. Louis.

SECTION ON OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY

MEETS ON MUNICIPAL PIER

OFFICERS OF SECTION

Chairman—FRANK W. LYNCH, San Francisco.
Vice-Chairman—FREDRICK J. TAUSSIG, St. Louis.
Secretary—CARL HENRY DAVIS, Milwaukee.
Executive Committee—SIDNEY A. CHALFANT, Pittsburgh; HARRY S. CROSSEN, St. Louis; FRANK W. LYNCH, San Francisco.

Wednesday, June 11—2 p. m.

1. Intraperitoneal Hemorrhage from Ruptured Ovarian Cyst. L. E. PHANEUF, Boston.
2. The Fate and Function of Ovaries After Hysterectomy (Lantern Demonstration). ALICE MAXWELL, San Francisco.
Discussion to be opened by EMIL RIES and CAREY CULBERTSON, Chicago.
3. The Endometrium of the Menstruating Uterus (Lantern Demonstration). EMIL NOVAK and R. W. TELINDE, Baltimore.
4. A Review of One Hundred Cases of Carcinoma of the Cervix, with Special Reference to the Predominating Type of Cell (Lantern Demonstration). L. A. POMEROY and ABRAHAM STRAUSS, Cleveland.
5. Cautery Knife Excision of the Malignant Uterus: Technic and Results. J. F. PERCY, Los Angeles.
6. Methods of Treatment and Results in One Thousand and Twenty-Four Cases of Cancer of the Uterine Cervix, Treated by Radium and Roentgen Ray (Lantern Demonstration). HAROLD C. BAILEY and WILLIAM P. HEALY, New York.
7. The Treatment of Fibromyomas of the Uterus and Other Causes of Menorrhagia, by Intensive Roentgen-Ray Therapy, with Especial Reference to the Possible Complication of Malignant Disease. LOUISA MARTINDALE, London, England.
Discussion to be opened by GEORGE GRAY WARD, New York, and ARTHUR CURTIS, Chicago.

Thursday, June 12—2 p. m.

8. Chairman's Address. FRANK W. LYNCH, San Francisco.
9. On the Value of Blood Chemistry in Pregnancy. JOSEPH J. MUNDELL and CHARLES W. O. BUNKER, Washington, D. C.
10. Syphilis as a Complication of Pregnancy in the Negro; Analysis of Three Hundred Cases; Results of Antisyphilitic Treatment; the Dark Field Illumination as an Aid in the Diagnosis of Fetal Syphilis at Necropsy (Lantern Demonstration). R. A. BARTHOLOMEW and G. B. ADAMS, Atlanta, Ga.
11. The Abdominal Binder as a Substitute for Pituitary Extract in the Second Stage of Labor. A. C. BECK, Brooklyn.
12. Thymus of the New-Born and Its Significance to the Obstetrician. REUBEN PETERSON and NORMAN F. MILLER, Ann Arbor, Mich.
13. Abdominal Diseases Secondary to Appendicitis. C. H. MAYO, Rochester, Minn.
14. The Prevention of Sterility. DONALD MACOMBER, Boston.
15. Further Results with Ovarian Implantation as Distinguished from Transplantation (Lantern Demonstration). W. L. ESTES, JR., Bethlehem, Pa.
Discussion to be opened by EDWARD REYNOLDS, Boston, and JOSEPH B. DELEE, Chicago.

Friday, June 13—2 p. m.

Election of Officers

16. When Is Sterilization Indicated Following Cesarean Section? JOHN B. SWIFT, Boston.
Discussion to be opened by RUDOLPH W. HOLMES, Chicago.
17. Pregnancy and Labor Complicated by Tumors and Injuries to the Spinal Cord. F. L. GOOD, Boston.
Discussion to be opened by DEAN LEWIS, Chicago.

18. Regional Nerve-Blocking in Labor.
H. T. COOKE, Los Angeles.
19. A Comparative Study of Ethylene Anesthesia (Lantern Demonstration). JOHN S. LUNDY, Rochester, Minn.
20. Ether in Blood, Milk, Urine and Breath After Ether Anesthesia. KARL GRAMEN, Stockholm, Sweden.
Discussion to be opened by ISABELLA C. HERB and N. SPROAT HEANEY, Chicago.
21. Chronic Gallbladder Disease in the Young Adult (Lantern Demonstration).
A. T. MANN and H. S. WILLSON, Minneapolis.
22. Operations on Twelve Patients with Tumors of the Pancreas (Lantern Demonstration).
JOHN J. GILBRIDE, Philadelphia.
23. Pancreatitis: Cases and Comments.
ARTHUR S. RISSER, Blackwell, Okla.
Discussion to be opened by ARTHUR D. BEVAN, Chicago.

SECTION ON OPHTHALMOLOGY

MEETS ON MUNICIPAL PIER

OFFICERS OF SECTION

Chairman—GEORGE S. DERBY, Boston.
Vice-Chairman—WALTER SCOTT FRANKLIN, San Francisco.
Secretary—WILLIAM C. FINNOFF, Denver.
Executive Committee—NELSON MILES BLACK, Milwaukee; JOHN O. MCREYNOLDS, Dallas, Texas; GEORGE S. DERBY, Boston.

Fellows are reminded that the meetings of the section will be called to order promptly on the hour scheduled for opening. The formal reading of the papers will be omitted, as reprints of the papers on the program have already been delivered to Fellows.

Each essayist will be given ten minutes in which to summarize the points in his paper and introduce the discussion (except in the case of five minute papers), and five minutes in which to close the discussion.

The Fellows appointed to open the discussion of any paper will be allowed ten minutes. Subsequent speakers will be limited to five minutes.

The papers and all discussions will be printed and bound, forming the Transactions of the Section on Ophthalmology for 1924. Copies of the Transactions may be obtained at $1.50 each, if subscriptions are sent to THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, 535 North Dearborn Street, Chicago, by June 1, as only enough copies are printed to cover subscriptions received to the time of going to press.

Fellows are requested to register in the section registration book at the entrance. The full name and complete postoffice address should be written plainly.

Wednesday, June 11—9 a. m.

1. Chairman's Address. GEORGE S. DERBY, Boston.
2. Further Observation on the Management of Pterygium (Lantern Demonstration).
JOHN O. MCREYNOLDS, Dallas, Texas.
Discussion to be opened by WALTER R. PARKER, Detroit.
3. Retinal Hemorrhages in the New-Born.
MAX W. JACOBS, St. Louis.
Discussion to be opened by J. A. KEARNEY, New York.
4. Conjunctivitis Infectiosa Necroticans (Pascheff).
H. H. STARK, El Paso, Texas.
Discussion to be opened by DERRICK T. VAIL, Cincinnati.
5. The Ophthalmologist and the Psychoneuroses.
LAWRENCE K. LUNT and AUSTIN FOX RIGGS, Stockbridge, Mass.
Discussion to be opened by EMORY HILL, Richmond, Va.
6. Toxemias of Pregnancy from an Ophthalmologic Standpoint. ROBERT CARTWRIGHT CHENEY, Boston.
Discussion to be opened by Allen Greenwood, Boston
7. Foreign Bodies in the Lens: A New Method of Removal.
JOHN A. DONOVAN, Butte, Mont.
Discussion to be opened by Arnold Knapp, New York.

Thursday, June 12—9 a. m.

DEMONSTRATION SESSION: EXHIBITION OF NEW INSTRUMENTS AND APPLIANCES

8. Lymphangioma of the Orbit.
WALTER SCOTT FRANKLIN and FREDERICK C. CORDES, San Francisco.
Discussion to be opened by MARCUS FEINGOLD, New Orleans.
9. Melanotic Neoplasms of the Eye (Lantern Demonstration).
MARY S. KNIGHT, Rochester, Minn.
Discussion to be opened by E. V. L. BROWN, Chicago.
10. Intravenous Use of Sodium Salicylate in Ocular Inflammations. MELVILLE BLACK, Denver.
Discussion to be opened by JOHN GREEN, JR., St. Louis.
11. Edema of the Eyelids.
SYLVESTER JUDD BEACH, Portland, Maine.
Discussion to be opened by W. B. WEIDLER, New York.
12. Telescopic Spectacles and Magnifiers as Aids to Poor Vision. HARRY S. GRADLE and JULES C. STEIN, Chicago.
Discussion to be opened by WALTER B. LANCASTER, Boston.
13. Retrobulbar Sarcoma Treated by Roentgen Rays (Lantern Demonstration). G. E. PFAHLER, Philadelphia.
Discussion to be opened by L. WEBSTER FOX, Philadelphia.
14. Radium in Ophthalmology with Special Reference to Its Use in Benign Affections (Lantern Demonstration).
LAURA A. LANE, Minneapolis.
Discussion to be opened by Edward Jackson, Denver.

Friday, June 13—9 a. m.

Executive Session
Election of Officers

15. Normal Stereoperimetry. WILLIAM E. SHAHAN, St. Louis.
Discussion to be opened by E. L. GOAR, Houston, Texas.
16. Conclusions Concerning a Scleroconjunctival Suture in Cataract Extraction. HARVEY J. HOWARD, Peking, China.
Discussion to be opened by E. C. ELLETT, Memphis, Tenn.
17. Miscellaneous Notes on Glaucoma.
HAROLD GIFFORD, Omaha.
Discussion to be opened by WILLIAM ZENTMAYER, Philadelphia.
18. A Simple Operation for the Relief of Mild Types of Entropion and Ectropion of the Lower Lid.
J. E. JENNINGS, St. Louis.
Discussion to be opened by WILLIAM H. WILDER, Chicago.
19. Relation of Hyperglycemia to Cataract (Lantern Demonstration).
HELEN BALDWIN and ELSE A. S. BARTHEL, New York.
Discussion to be opened by H. MAXWELL LANGDON, Philadelphia.

SECTION ON LARYNGOLOGY, OTOLOGY AND RHINOLOGY

MEETS ON MUNICIPAL PIER

OFFICERS OF SECTION

Chairman—WENDELL C. PHILLIPS, New York.
Vice-Chairman—HARRINGTON B. GRAHAM, San Francisco.
Secretary—SAMUEL IGLAUER, Cincinnati.
Executive Committee—J. A. STUCKY, Lexington, Ky.; WILLIAM B. CHAMBERLIN, Cleveland; WENDELL C. PHILLIPS, New York.

Wednesday, June 11—2 p. m.

1. Chairman's Address (Lantern Demonstration).
WENDELL C. PHILLIPS, New York.
2. Address. JOHN SENDZIAK, Warsaw, Poland.
3. Toxic Infection of the Auditory Nerve.
ARTHUR B. DUEL, New York.
Discussion to be opened by J. W. JERVEY, Greenville, S. C., and NORVAL H. PIERCE, Chicago.
4. Allergic Reactions of the Upper Respiratory Tract (Moving Picture Demonstration).
ANDREW A. EGGSTON, New York.
Discussion to be opened by KARL K. KOESSLER, Chicago.
5. Rhinologic Observations with Speculation Concerning the Involuntary Nervous System.
GREENFIELD SLUDER, St. Louis.
Discussion to be opened by A. J. CARLSON, Chicago.
6. The Anastomosis of the Recurrent Laryngeal Nerve with the Descendens Noni in Cases of Recurrent Laryngeal Paralysis (Lantern Demonstration).
CHARLES H. FRAZIER, Philadelphia.
Discussion to be opened by CHEVALIER JACKSON, Philadelphia.

Thursday, June 12—2 p. m.

7. Radium Treatment of Neoplasms of the Upper Air Passages (Lantern Demonstration).
G. ALLEN ROBINSON, New York.
Discussion to be opened by ROBERT C. LYNCH, New Orleans, and DOUGLAS QUICK, New York.

8. Systemic Infections Complicating Purulent Middle Ear Disease. SAMUEL J. KOPETZKY, New York
Discussion to be opened by JOHN F. BARNHILL, Indianapolis.
9. Technic of the Surgery of Brain Abscess (Lantern Demonstration). CHARLES A. ELSBERG, New York
Discussion to be opened by ISIDORE FRIESNER, New York.
10. The Treatment of Brain Abscess: A Surgical Technic in Which the Usual Drainage Methods Are Avoided (Report of Cases) (Lantern Demonstration).
JOSEPH E. J. KING, New York.
Discussion to be opened by GORDON WILSON, Baltimore.
11. Surgical Treatment of Meningitis (Third Contribution).
WELLS P. EAGLETON, Newark, N. J.
Discussion to be opened by GEORGE E. SHAMBAUGH, Chicago.
12. Pure Gas-Oxygen Anesthesia for Ear, Nose and Throat Surgery (Lantern Demonstration).
E. I. MCKESSON, Toledo, Ohio.
Discussion to be opened by JOHN EVANS, Buffalo, and JOHN N. LENKER, Cleveland.

Friday, June 13—2 p. m.

Election of Officers
Exhibition of New Instruments and Appliances
Report of Committees

Necrology.
EMIL MAYER, New York, Chairman; T. J. HARRIS, New York; WILLIAM B. CHAMBERLIN, Cleveland.

Lye Legislation.
CHEVALIER JACKSON, Philadelphia, Chairman; WILLIAM B. CHAMBERLIN, Cleveland; CHESTER H. BOWERS, Los Angeles; THOMAS E. CARMODY, Denver; LEE W. DEAN, Iowa City; HENRY H. FORBES, New York; THOMAS H. HALSTEAD, Syracuse, N. Y.; SAMUEL IGLAUER, Cincinnati; C. J. IMPERATORI, New York; J. W. JERVEY, Greenville, S. C.; ROBERT C. LYNCH, New Orleans; RICHMOND MCKINNEY, Memphis, Tenn.; T. W. MOORE, Huntington, W. Va.; H. B. ORTON, Newark, N. J.; ELLEN J. PATTERSON, Pittsburgh; H. MARSHALL TAYLOR, Jacksonville, Fla.; CHARLES J. RICHARDSON, Washington, D. C.; GREENFIELD SLUDER, St. Louis; J. A. STUCKY, Lexington, Ky.; M. F. ARBUCKLE, St. Louis.

Examining Board in Otolaryngology.
GEORGE E. SHAMBAUGH, Chicago, Chairman; NORVAL H. PIERCE, Chicago.

Problems of the Hard of Hearing.
HAROLD M. HAYS, New York, Chairman; NORVAL H. PIERCE, Chicago; WENDELL C. PHILLIPS, New York; GEORGE E. SHAMBAUGH, Chicago; HORACE NEWHART, Minneapolis.

Otolaryngologic Hygiene of Swimming.
H. M. TAYLOR, Jacksonville, Fla., Chairman; RALPH A. FENTON, Portland, Ore., HILL HASTINGS, Los Angeles; M. F. ARBUCKLE, St. Louis; LEE M. HURD, New York.

Education of the Deaf Child.
C. W. RICHARDSON, Washington, D. C., Chairman; ELMER E. KENYON, Chicago; M. A. GOLDSTEIN, St. Louis.

13. The Surgical Treatment of Laryngeal Cancer, with Analysis of About One Hundred Cases (Lantern Demonstration). JOHN EDMUND MACKENTY, New York.
Discussion to be opened by ROBERT C. LYNCH, New Orleans.
14. Present Status of the Intranasal Ethmoid Operation (Lantern Demonstration). J. A. PRATT, Minneapolis.
Discussion to be opened by ROSS H. SKILLERN, Philadelphia, and HARRIS P. MOSHER, Boston.
15. Abscess of the Lung: Its Treatment by Aspiration and Medication Through the Mouth (Lantern and Moving Picture Demonstration).
CHEVALIER JACKSON, LOUIS H. CLERF, GABRIEL TUCKER, ROBERT LUKENS and WILLIAM F. MOORE, Philadelphia.
Discussion to be opened by THOMAS MCCRAE, W. F. MANGES and THOMAS A. SHALLOW, Philadelphia.
16. Surgical Treatment of Pulmonary Abscess, with Special Reference to the Post-Tonsillectomy Type.
CARL A. HEDBLOM, Rochester, Minn.
Discussion to be opened by CHARLES J. IMPERATORI, New York, and M. C. MYERSON, Brooklyn.
17. Foreign Bodies in the Lung of Dental Origin, with Analysis of One Hundred and Seventeen Cases.
ELBYRNE G. GILL, Roanoke, Va.
Discussion to be opened by WILLIAM B. CHAMBERLIN, Cleveland, and T. E. CARMODY, Denver.

SECTION ON DISEASES OF CHILDREN

MEETS OF MUNICIPAL PIER

OFFICERS OF SECTION

Chairman—HENRY F. HELMHOLZ, Rochester, Minn.
Vice-Chairman—HENRY DIETRICH, Los Angeles.
Secretary—EDGAR J. HUENEKENS, Minneapolis.
Executive Committee—EMANUEL C. FLEISCHNER, San Francisco; BORDEN S. VEEDER, St. Louis; HENRY F. HELMHOLZ, Rochester, Minn.

Wednesday, June 11—9 a. m.

1. Chairman's Address.
HENRY F. HELMHOLZ, Rochester, Minn.
2. Effect of Tonsillectomy on General Health of One Thousand, Two Hundred Children, as Compared to an Equal Number Not Operated on (Lantern Demonstration).
ALBERT D. KAISER, Rochester, N. Y.
3. Immunity Results Obtained with Diphtheria Toxoid (Modified Toxin) and with the New $\frac{1}{10}$ L + Mixtures of Toxin-Antitoxin in the Public Schools of New York (Manhattan and the Bronx) (Lantern Demonstration).
ABRAHAM ZINGHER, New York.
Discussion to be opened by WILLIAM H. PARK, New York; FRANK C. NEFF, Kansas City, Mo., and E. C. FLEISCHNER, San Francisco.
4. Spread of Scarlet Fever in the Patient's Home and in the Public Schools.
WILLIAM F. REASNER, Minneapolis.
5. Fatigue in School Children (Lantern Demonstration).
MAX SEHAM, Minneapolis.
6. The Overweight Child. BORDEN S. VEEDER, St. Louis.
7. Sickle Cell Anemia from a Pediatric Point of View (Lantern Demonstration).
W. A. MULHERIN, Augusta, Ga.
Discussion to be opened by JOHN G. HUCK, Baltimore, and V. P. SYDENSTRICKER, Augusta, Ga.

Thursday, June 12—9 a. m.

SYMPOSIUM ON APPENDICITIS

8. Acute Appendicitis in Children.
R. W. BOLLING, New York.
9. Chronic Appendicitis in Children (Lantern Demonstration). CHARLES G. MIXTER, Boston.
10. Appendicitis in Children from the Medical Point of View.
JOHN HOWLAND, Baltimore.
Open discussion.
11. The Food Requirements of Malnourished Infants (Lantern Demonstration). W. MCKIM MARRIOTT, St. Louis.
12. Habitual Hyperthermia During Recovery from Scarlet Fever. HEINRICH FINKELSTEIN, Berlin, Germany.
13. Some Aspects of Enuresis (Lantern Demonstration).
SAMUEL AMBERG, Rochester, Minn.
14. Rosenow's Serum in the Prevention of Paralysis in Anterior Poliomyelitis. FLOYD S. CLARKE, Omaha.
Discussion to be opened by E. C. ROSENOW, Rochester, Minn.

Friday, June 13—9 a. m.

Election of Officers

15. Results of Treatment in Four Hundred Cases of Congenital Syphilis (Lantern Demonstration).
CHARLES C. DENNIE, Kansas City, Mo., and HUGH L. DWYER, Kansas City, Kan.
16. Ultraviolet Ray Therapy in Peritoneal and Glandular Tuberculosis of Children (Lantern Demonstration).
HENRY J. GERSTENBERGER and S. A. WAHL, Cleveland.
17. Address. LEONARD FINDLAY, Glasgow, Scotland.
18. Newer Clinical Signs of Early Rickets (Lantern Demonstration). C. U. MOORE, Portland, Ore.
19. The Treatment of Rickets with Alpine Lamp in an Outpatient Department (Lantern Demonstration).
EDWIN T. WYMAN, Boston.
20. The Influence of the Diet of the Mother During Pregnancy and Lactation on the Subsequent Development of Rickets in the Young. ALFRED F. HESS, New York.
21. The Correlation Between the Clinical, Serologic and Radiologic Evidences of Rickets in the Breast Fed.
L. R. DEBUYS and LUDO VON MEYSENBUG, New Orleans.
Discussion to be opened by ISAAC A. ABT, Chicago, and H. F. HELMHOLZ, Rochester, Minn.

SECTION ON PHARMACOLOGY AND THERAPEUTICS

MEETS ON MUNICIPAL PIER

OFFICERS OF SECTION

Chairman—PAUL J. HANZLIK, San Francisco.
Vice-Chairman—W. WORTH HALE, Boston.
Secretary—PAUL D. WHITE, Boston.
Executive Committee—CARL VOEGTLIN, Washington, D. C.; CARY EGGLESTON, New York; PAUL J. HANZLIK, San Francisco.

Wednesday, June 11—9 a. m.

JOINT MEETING OF SECTIONS ON PHARMACOLOGY AND THERAPEUTICS AND ON PREVENTIVE AND INDUSTRIAL MEDICINE AND PUBLIC HEALTH

SYMPOSIUM ON RESUSCITATION

1. Resuscitation After Electrical Shock.
WILLS MACLACHLAN, Toronto, Canada.
2. Resuscitation from Carbon Monoxid Asphyxia, from Ether or Alcohol Intoxication, and Respiratory Failure Due to Other Causes.
YANDELL HENDERSON, New Haven, Conn.
3. Artificial Respiration in Electric Shock and Gas Poisoning.
CECIL K. DRINKER, Boston.

SYMPOSIUM ON LEAD POISONING

4. Diagnosis of Lead Poisoning.
MARVIN D. SHIE, Cleveland.
5. Lead Poisoning in Industry. ALICE HAMILTON, Boston.
6. Recent Studies of the Mechanism and Treatment of Lead Poisoning (Lantern Demonstration).
JOSEPH C. AUB, Boston.

Discussion of Papers 4, 5 and 6 to be opened by PAUL J. HANZLIK, San Francisco.

Thursday, June 12—9 a. m.

7. Chairman's Address: The Basis of Allergic Phenomena (Lantern Demonstration).
PAUL J. HANZLIK, San Francisco.
8. Conditions Modifying Actions of Drugs.
WILLIAM SALANT, Augusta, Ga.
9. Pharmacology and Toxicology of Carbon Tetrachlorid.
PAUL D. LAMSON, Baltimore.
10. Pharmacology and Therapeutic Use of Bismuth (Lantern Demonstration). J. GARDNER HOPKINS, New York.
11. Calcium Therapy in Nephritis with Edema (Lantern Demonstration).
NORMAN M. KEITH, Rochester, Minn.
12. Secretion of Bactericidal Urine and Disinfection of Urinary Tract Following Oral Administration of Certain Alkali Derivatives of Resorcinol.
VEADER N. LEONARD, Baltimore.

Friday, June 13—9 a. m.

Election of Officers

13. Comparative Methods of Protein Extraction with Chemical and Clinical Studies (Lantern Demonstration).
G. W. PINESS, Los Angeles.
14. Use of Iodin in Treatment of Exophthalmic Goiter (Lantern Demonstration).
HENRY S. PLUMMER, Rochester, Minn.
15. Concealed Infections in Diabetes Mellitus.
PHIL L. MARSH, Ann Arbor, Mich.
16. Diathermy in Internal Medicine.
EDWARD W. JACKSON, Rochester, N. Y.
17. Evaluation of Some Newer Local Anesthetics.
HUGH MCGUIGAN, Chicago.

SECTION ON PATHOLOGY AND PHYSIOLOGY

MEETS ON MUNICIPAL PIER

OFFICERS OF SECTION

Chairman—KENNETH M. LYNCH, Dallas, Texas.
Vice-Chairman—C. W. GREENE, Columbia, Mo.
Secretary—JOSIAH J. MOORE, Chicago.
Executive Committee—JOHN A. KOLMER, Philadelphia; ARNO BENEDICT LUCKHARDT, Chicago; KENNETH M. LYNCH, Dallas, Texas.

Wednesday, June 11—2 p. m.

1. Chairman's Address: The Specialist in Pathologic Anatomy. KENNETH M. LYNCH, Dallas, Texas.
2. Rapid Provisional Microscopic Diagnosis of Malignancy, Without a Microtome.
BENJAMIN TAYLOR TERRY, Nashville, Tenn.
3. Action of Buried Glass Capillaries of Radium Emanation on Plant and Animal Tissues.
ISAAC LEVIN, New York.
4. Clinical Versus Experimental Anastomosis of the Hollow Viscera (Lantern Demonstration).
MOSES BEHREND, Philadelphia.
5. The Gallbladder: A Physiologic Consideration (Lantern Demonstration). FRANK C. MANN, Rochester, Minn.
6. The Hepatic Internal Secretion in Anaphylaxis.
W. H. MANWARING, Palo Alto, Calif.
7. Further Observations on a Chemical Factor in the Resistance to Tuberculosis (Lantern Demonstration).
HARRY J. CORPER, Denver.
8. The Spectroscopic and Chemical Demonstration of Occult Blood in the Feces. CHARLES D. AARON, Detroit.

Thursday, June 12—2 p. m.

SYMPOSIUM ON CANCER

9. Experimental Pathology (Lantern Demonstration).
FRANCIS CARTER WOOD, New York.
10. Pathologic Diagnosis. JAMES T. EWING, New York.
11. Diagnosis of External Cancer (Lantern Demonstration).
MARTIN ENGMAN, St. Louis.
12. The Point of View of the Internist.
JOHN DUDLEY DUNHAM, Columbus, Ohio.
13. The Surgical Treatment of Cancer (Lantern Demonstration). EDWARD STARR JUDD, Rochester, Minn.
14. Radiation Therapy of Malignant Disease (Lantern Demonstration). JAMES T. CASE, Battle Creek, Mich.

Discussion of Papers 9, 10, 11, 12, 13 and 14 to be opened by CLAUDE REGAUD, Paris, France; H. GIDEON WELLS, Chicago; JOSEPH C. BLOODGOOD, Baltimore; DEAN LEWIS and FRANK SMITHIES, Chicago, and HOWARD A. KELLY, Baltimore.

Friday, June 13—2 p. m.

Election of Officers

15. Preparation, Pharmacology and Therapeutic Use of Shattered Hemoprotein. CLYDE BROOKS, University, Ala.
16. The Addition of Iodin to Water Supplies for Prevention of Simple and Exophthalmic Goiter (Lantern Demonstration). J. F. MCCLENDON, Minneapolis.
17. Some Newer Points in the Physiology of the Smooth Muscle and Its Nerve Relations.
C. W. GREENE and C. D. BONHAM, Columbia, Mo.
18. The Rôle of Monilia Psilosis (Ashfordi) in Experimental Sprue (Including Mycologic Studies of Twenty Strains of Monilia) (Lantern Demonstration).
LAWRENCE WELD SMITH, Boston.
19. Further Experiments with the Botulinus Toxin.
C. W. EDMUNDS, Ann Arbor, Mich.
20. An Unusual Fungus Occurring in Three Cases of Chronic Pulmonary Infection (Lantern Demonstration).
H. R. WAHL, Rosedale, Kan.
21. The Regeneration of the Pancreas.
NELSON F. FISHER, Dallas, Texas.

SECTION ON STOMATOLOGY

MEETS ON MUNICIPAL PIER

OFFICERS OF SECTION

Chairman—JOSEPH A. PETTIT, Portland, Ore.
Vice-Chairman—JAMES G. SHARP, San Francisco.
Secretary—GEORGE V. I. BROWN, Milwaukee.
Executive Committee—HERBERT A. POTTS, Chicago; ROBERT H. IVY, Philadelphia; JOSEPH A. PETTIT, Portland, Ore.

Wednesday, June 11—2 p. m.

1. Chairman's Address. JOSEPH A. PETTIT, Portland, Ore.
2. Infection, with Special Reference to Oral Conditions.
ALFRED STENGEL, Philadelphia.
3. Clinical and Pathologic Aspects of Focal Infection, with Especial Reference to Oral, Nasal and Pharyngeal Tracts (Lantern Demonstration).
GEORGE B. EUSTERMAN, Rochester, Minn.

Discussion to be opened by CHARLES MAYO, Rochester, Minn., and FRANK BILLINGS and ARTHUR D. BLACK, Chicago.

4. Observations on the Diagnosis of Oral Foci of Infection (Lantern Demonstration).
LEROY M. ENNIS, Philadelphia.
5. The Value of the Roentgenogram in the Diagnosis of Jaw Tumors (Lantern Demonstration).
GORDON B. NEW and FREDERICK A. FIGI, Rochester, Minn.

6. Two Cases of Excessive Hypertrophy of the Gums, with Results (Lantern Demonstration).
S. D. RUGGLES, Portsmouth, Ohio.
Discussion to be opened by J. P. McMAHON, Milwaukee.

Thursday, June 12—2 p. m.

7. A Study of Relative Density of Anatomic Structures as Affecting the Teeth and Supporting Parts (Lantern Demonstration). HUGH W. MACMILLAN, Cincinnati.
8. Pain in the Fifth Nerve Area: Some Unusual and Unclassified Forms. HARRY PARKER, Rochester, Minn.
9. The Chemical Division of the Gasserian Ganglion for Tic Douloureux. GEORGE M. DORRANCE, Philadelphia.
10. Surgery of the Supra-Orbital Region.
LUCIUS W. JOHNSON, Washington, D. C.
11. Surgical Injuries of Cranial Nerves from Operations on the Face and Neck (Lantern Demonstration).
WILLIAM WAYNE BABCOCK, Philadelphia.
Discussion to be opened by ALLEN B. KANAVEL, Chicago, and CHARLES H. FRAZIER, Philadelphia.

Friday, June 13—2 p. m.

Election of Officers

12. Treatment of Nasal Deformities, with Especial Reference to Nasal Prosthesis (Lantern Demonstration).
V. H. KAZANJIAN, Boston.
13. Repair of Acquired Defects of the Face (Lantern Demonstration). ROBERT H. IVY, Philadelphia.
14. Harelip Operations (Lantern Demonstration).
VILRAY PAPIN BLAIR, St. Louis.
15. Some Plastic Problems and Their Solution.
GEORGE C. SCHAEFFER, Columbus, Ohio.
Discussion to be opened by CARL BECK, Chicago, and W. T. COUGHLIN, St. Louis.

SECTION ON NERVOUS AND MENTAL DISEASES

MEETS ON MUNICIPAL PIER

OFFICERS OF SECTION

Chairman—WALTER F. SCHALLER, San Francisco.
Vice-Chairman—EDWIN G. ZABRISKIE, New York.
Secretary—JAMES B. AYER, Boston.
Executive Committee—PETER BASSOE, Chicago; WALTER TIMME, New York; WALTER F. SCHALLER, San Francisco.

Wednesday, June 11—9 a. m.

1. Chairman's Address. W. F. SCHALLER, San Francisco.
2. Some Cases Showing Increased Muscle Movements.
LEWIS J. POLLOCK, Chicago.
3. Nonsyphilitic Psychoses in Syphilitic Persons.
WILLIAM HOUSE, Portland, Ore.
4. The Mental and Nervous Side of Narcotic Drug Addictions. CORNELIUS C. WHOLEY, Pittsburgh.
5. Significance of Lumbosacral Pain.
GEORGE MARTYN, Los Angeles.
6. Parkinsonian Syndrome in Encephalitis (Lantern Demonstration). EDWARD LIVINGSTON HUNT, New York.
7. Residua and Sequelae of Epidemic Encephalitis, with Especial Reference to Psychotic Symptoms (Lantern Demonstration). S. PHILIP GOODHART, New York.

Thursday, June 12—9 a. m.

8. The Physiology of Globus Hystericus and of Related Conditions. EDMUND JACOBSON, Chicago.
9. The Traumatized Neurotic (Lantern Demonstration).
MILTON B. LENNON, San Francisco.
10. Studies on Mental Hygiene Needs of Freshman University Students: Preliminary Report (Lantern Demonstration).
ANGUS W. MORRISON and H. S. DIEHL, Minneapolis.
11. Glossopharyngeal Neuralgia and Its Treatment (Lantern Demonstration). ALFRED W. ADSON, Rochester, Minn.
12. A Neglected Factor in the Prevention of Apoplexy.
H. H. DRYSDALE, Cleveland.
13. Heredosyphilitic Cranial Osteoporosis (Lantern Demonstration). KARL A. MENNINGER, Topeka, Kan.

Friday, June 13—9 a. m.

Election of Officers

SYMPOSIUM ON THE TREATMENT OF NEUROSYPHILIS

14. Neurosyphilis Six or More Years After Treatment.
LOYD THOMPSON, Hot Springs National Park, Ark.
15. The Use of Tryparsamide in Cases of General Paralysis: Results of the First Year's Experience.
FRANKLIN G. EBAUGH, Philadelphia.
16. Ophthalmologic Observations in Tryparsamide Therapy of Central Nervous System Syphilis (Lantern Demonstration). WALTER I. LILLIE, Rochester, Minn.
17. The Results of Tryparsamide Therapy in Syphilis (Lantern Demonstration).
JOSEPH EARLE MOORE, HARRY M. ROBINSON and RICHARD S. LYMAN, Baltimore.
18. A Comparison of Tryparsamide and Other Drugs in the Treatment of Neurosyphilis.
HARRY C. SOLOMON and HENRY R. VIETS, Boston.

SECTION ON DERMATOLOGY AND SYPHILOLOGY

MEETS ON MUNICIPAL PIER

OFFICERS OF SECTION

Chairman—HAROLD N. COLE, Cleveland.
Vice-Chairman—I. L. MCGLASSON, San Antonio, Texas.
Secretary—JAMES HERBERT MITCHELL, Chicago.
Executive Comittee—ERNEST DWIGHT CHIPMAN, San Francisco; MARCUS HAASE, Memphis, Tenn.; HAROLD N. COLE, Cleveland.

Wednesday, June 11—9 a. m.

1. Chairman's Address. HAROLD N. COLE, Cleveland.
2. The Incidence of Spirochaeta Pallida in the Cerebrospinal Fluid During the Early Stage of Syphilis.
ALAN M. CHESNEY and JAROLD E. KEMP, Baltimore.
3. Reinfection in Syphilis. JAMES R. DRIVER, Cleveland.
4. Microscopic Study of Mercury Absorption from Skin (Lantern Demonstration). KARL G. ZWICK, Cincinnati.
5. Chemotherapy of Sulpharsphenamin (Lantern Demonstration). GEORGE W. RAIZISS, Philadelphia.
6. Tryparsamide in the Treatment of Neurosyphilis (Lantern Demonstration).
UDO J. WILE and LESTER M. WIEDER, Ann Arbor, Mich.
7. Results Secured by Standard Methods of Treatment in Four Hundred and Five Cases of Neurosyphilis (Lantern Demonstration).
JOHN H. STOKES and LOREN W. SHAFFER, Rochester, Minn.

Thursday, June 12—9 a. m.

8. The Known and the Unknown about Psoriasis.
J. FRANK SCHAMBERG, Philadelphia.
Discussion to be opened by WILLIAM ALLEN PUSEY, Chicago.
9. Universal Leukemia Cutis.
HARTHER L. KEIM, Ann Arbor, Mich.
10. Congenital Ectodermal Defect.
GEORGE MILLER MACKEE and GEORGE C. ANDREWS, New York.
Discussion to be opened by W. H. GOECKERMAN, Rochester, Minn.
11. Leiomyoma of the Skin (Lantern Demonstration).
KENDALL P. FROST, Los Angeles.
Discussion to be opened by OTTO FOERSTER, Milwaukee.
12. So-Called Acrodynia in Children (Lantern Demonstration). JOHN BUTLER, Minneapolis.
Discussion to be opened by EDWARD ALLEN OLIVER, Chicago.
13. Is Dandruff Seborrheal?
WALTER J. HIGHMAN and RAY H. RULISON, New York.
14. Sarcoid Due to Focal Infection.
EUGENE R. WHITMORE, Washington, D. C.

Friday, June 13—9 a. m.

Election of Officers

15. Tuberculosis of the Tongue (Lantern Demonstration).
HOWARD MORROW and HIRAM E. MILLER, San Francisco.
16. Tuberculosis Colliquativa (Scrofuloderma) (Lantern Demonstration). HENRY E. MICHELSON, Minneapolis.
Discussion of Papers 15 and 16 to be opened by OLIVER S. ORMSBY, Chicago.
17. Sporotrichosis (Lantern Demonstration).
W. H. GUY and F. M. JACOB, Pittsburgh.
18. Further Observations in the Treatment of Arsphenamin Dermatitis, Mercurial Poisoning and Lead Intoxication.
WILLIAM L. MCBRIDE, Kansas City, Mo.
19. Glucose Tolerance Reactions in Eczema (Lantern Demonstration). SAMUEL AYRES, JR., Los Angeles.
Discussion to be opened by I. L. MCGLASSON, San Antonio, Texas.
20. Electricity in Dermatology.
ERNEST D. CHIPMAN, San Francisco.
21. Management of Impetigo Contagiosa in Maternity Hospitals J. HARPER BLAISDELL, Boston.

SECTION ON PREVENTIVE AND INDUSTRIAL MEDICINE AND PUBLIC HEALTH

MEETS ON MUNICIPAL PIER

OFFICERS OF SECTION

Chairman—W. S. LEATHERS, University, Miss.
Vice-Chairman—WALTER M. DICKIE, Los Angeles.
Secretary—W. F. DRAPER, Washington, D. C.
Executive Committee—S. W. WELCH, Montgomery, Ala.; JOHN A. FERRELL, New York; W. S. LEATHERS, University, Miss.

Wednesday, June 11—9 a. m.

1. Chairman's Address: County Health Organization Fundamental in Efficient Health Service.
W. S. LEATHERS, University, Miss.

JOINT MEETING OF SECTIONS ON PHARMACOLOGY AND THERAPEUTICS AND ON PREVENTIVE AND INDUSTRIAL MEDICINE AND PUBLIC HEALTH

SYMPOSIUM ON RESUSCITATION

2. Resuscitation After Electrical Shock.
WILLS MACLACHLAN, Toronto, Canada.
3. Resuscitation from Carbon Monoxid Asphyxia, from Ether or Alcohol Intoxication, and Respiratory Failure Due to Other Causes.
YANDELL HENDERSON, New Haven, Conn.
4. Artificial Respiration in Electric Shock and Gas Poisoning.
CECIL K. DRINKER, Boston.

SYMPOSIUM ON LEAD POISONING

5. Diagnosis of Lead Poisoning.
MARVIN D. SHIE, Cleveland.
6. Lead Poisoning in Industry. ALICE HAMILTON, Boston.
7. Recent Studies of the Mechanism and Treatment of Lead Poisoning (Lantern Demonstration).
JOSEPH C. AUB, Boston.

Discussion of Papers 5, 6 and 7 to be opened by PAUL J. HANZLIK, San Francisco.

Thursday, June 12—9 a. m.

8. Opportunities of Preventive Medicine in Institutions of Higher Learning. J. HOWARD BEARD, Urbana, Ill.

Discussion to be opened by JOHN SUNDWALL, Ann Arbor, Mich., and J. J. MCSHANE, Springfield, Ill.

9. Public Health Research.
A. M. STIMSON, Washington, D. C.

Discussion to be opened by EDWIN O. JORDAN and HERMAN N. BUNDESEN, Chicago.

10. The Elimination of Personal Politics from Public Health Work. W. S. RANKIN, Raleigh, N. C.

Discussion to be opened by W. C. WOODWARD, Chicago; V. H. BASSETT, Savannah, Ga., and J. E. MONGER, Columbus, Ohio.

11. Tax Reduction, Plus a Bonus, for Rural Communities.
RUSSELL B. SPRAGUE, Yarmouth Port, Mass.

Discussion to be opened by ISAAC D. RAWLINGS, Springfield, Ill.; JOHN A. FERRELL, New York, and C. A. GROTE, Huntsville, Ala.

12. Eczematoid Ringworm. H. H. HAZEN, Washington, D. C.

Discussion to be opened by G. C. LAKE, Washington, D. C.

13. Some Special Features of the Massachusetts Program for Venereal Disease Control.
EUGENE R. KELLEY and ALBERT PFEIFFER, Boston.

Discussion to be opened by H. M. BRACKEN, New York, and C. C. PIERCE, Chicago.

Friday, June 13—9 a. m.

Election of Officers

14. The Aims of the Division of Industrial Hygiene of the New York State Department of Labor.
LELAND E. COFER, New York.

Discussion to be opened by GEORGE G. DAVIS, Chicago, and F. L. RECTOR, New York.

15. Report of an Epidemic of Paratyphoid Fever in Patrons of a Cafeteria.
ORIANNA MCDANIEL and E. M. WADE, St. Paul.

Discussion to be opened by L. L. LUMSDEN, Washington, D. C., and J. A. HAYNE, Columbia, S. C.

16. Deaths from Diabetes in New York City Since 1868 (Lantern Demonstration). HAVEN EMERSON, New York.

Discussion to be opened by ELLIOTT P. JOSLIN, Boston, and LOUIS I. DUBLIN, New York.

17. Outlook for Public Health and Preventive Medicine (Lantern Demonstration). LOUIS I. DUBLIN, New York.

Discussion to be opened by W. A. EVANS and JOHN M. DODSON, Chicago.

18. Observations on the Diphtheria Carrier as an Agent in the Spread of Diphtheria. F. M. MEADER, Detroit.

Discussion to be opened by EDWARD S. GODFREY, Albany, N. Y., and A. J. CHESLEY, St. Paul.

19. The Control of Diphtheria (Moving Picture Demonstration). G. W. GOLER, Rochester, N. Y.

SECTION ON UROLOGY

MEETS ON MUNICIPAL PIER

OFFICERS OF SECTION

Chairman—HERMAN L. KRETSCHMER, Chicago.
Vice-Chairman—FRANK HINMAN, San Francisco.
Secretary—GEORGE GILBERT SMITH, Boston.
Executive Committee—JAMES A. GARDNER, Buffalo; HENRY G. BUGBEE, New York; HERMAN L. KRETSCHMER, Chicago.

Wednesday, June 11—2 p. m.

1. Notes on a Series of Prostatectomies.
ARTHUR H. CROSBIE, Boston.
2. Perineal Prostatectomy. EDWIN G. DAVIS, Omaha.
3. Punch Operation (Lantern Demonstration).
JOHN R. CAULK, St. Louis.

Discussion to be opened by BRANSFORD LEWIS, St. Louis. and LOUIS E. SCHMIDT, Chicago.

4. Surgical Pathology of the Urinary Tract in Infants, Based on a Review of Four Thousand, Eight Hundred Necropsies (Lantern Demonstration).
HENRY G. BUGBEE and MARTHA WOLLSTEIN, New York.

Discussion to be opened by ABRAHAM HYMAN, New York.

5. The Rôle of Focal Infection in Diseases of the Genito-Urinary Tract (Lantern Demonstration).
W. CALHOUN STIRLING, Winston-Salem, N. C.

Discussion to be opened by E. C. ROSENOW, Rochester, Minn.

6. Perinephritic Abscess (Lantern Demonstration).
VERNE C. HUNT, Rochester, Minn.
7. Perinephritic Abscess as a Urologic Problem (Lantern Demonstration). NELSE F. OCKERBLAD, Kansas City, Mo.

Discussion to be opened by WILLIAM F. BRAASCH, Rochester, Minn.

Thursday, June 12—2 p. m.

8. Chairman's Address: Graduate Teaching of Urology.
HERMAN L. KRETSCHMER, Chicago.

SYMPOSIUM ON HEMATURIA

9. Importance of Hematuria as a Symptom (Lantern Demonstration). ARTHUR L. CHUTE, Boston.
10. Hematuria as a Symptom of Systemic Disease.
EDWIN A. LOCKE and GEORGE R. MINOT, Boston.
11. Renal Hematuria. LEON HERMAN, Philadelphia.
12. Possible Causes of Renal Bleeding Which Cannot Be Accurately Diagnosed (Lantern Demonstration).
GEORGE R. LIVERMORE, Memphis, Tenn.
13. Hematuria of Bladder Origin (Lantern Demonstration).
B. A. THOMAS, Philadelphia.
14. Hematuria of Prostatic and Urethral Origin.
WALTER H. MCNEILL, JR., New York.

Discussion of Papers 9, 10, 11, 12, 13 and 14 to be opened by FRANK BILLINGS, Chicago; WILLIAM N. WISHARD, Indianapolis, and FRANK HINMAN, San Francisco.

Friday, June 13—2 p. m.

Election of Officers

15. Tumors of the Dome of the Bladder (Lantern Demonstration). ALBERT J. SCHOLL, Rochester, Minn.
16. Modern Methods and Results of Treating Malignancy of the Bladder. HERMON C. BUMPUS, Rochester, Minn.
17. Diathermy in Urology (Lantern Demonstration).
H. W. E. WALTHER, New Orleans.

Discussion to be opened by B. C. CORBUS and GUSTAV KOLISCHER, Chicago.

18. Paravertebral Anesthesia for Operations on the Kidney (Moving Picture Demonstration).
OSWALD S. LOWSLEY, New York.
19. The Female Bladder (Lantern Demonstration).
WILLIAM E. STEVENS and ELIZABETH ARTHURS, San Francisco.

Discussion to be opened by GRANVILLE MACGOWAN, Los Angeles.

20. Diverticula of the Urinary Bladder (Lantern Demonstration).
ROBERT V. DAY and HARRY W. MARTIN, Los Angeles.
21. Recurrence of Stone in the Urinary Tract (Lantern Demonstration). FREDERICK T. LAU, New York.
Discussion to be opened by ANDREW J. CROWELL, Charlotte, N. C., and DANIEL N. EISENDRATH, Chicago.

SECTION ON ORTHOPEDIC SURGERY

MEETS ON MUNICIPAL PIER

OFFICERS OF SECTION

Chairman—HENRY B. THOMAS, Chicago.
Vice-Chairman—F. J. GAENSLEN, Milwaukee.
Secretary—JAMES ARCHER O'REILLY, St. Louis.
Executive Committee—H. WINNETT ORR, Lincoln, Neb.; WILLIS C. CAMPBELL, Memphis, Tenn.; HENRY B. THOMAS, Chicago.

Wednesday, June 11—2 p. m.

1. Clawfoot Operation for, and New Instruments to Shorten Time of, Operation (Lantern Demonstration).
G. D. MARSHALL, Kokomo, Ind.
Discussion to be opened by F. J. GAENSLEN, Milwaukee; C. B. FRANCISCO, Kansas City, Mo., and G. I. BAUMAN, Cleveland.
2. Dislocations of and Fractures Involving the Knee Joint (Lantern Demonstration).
M. L. KLINEFELTER, St. Louis.
Discussion to be opened by KELLOGG SPEED, Chicago; W. C. CAMPBELL, Memphis, Tenn., and WALTER G. STERN, Cleveland.
3. The Operative Treatment of Displacements of the Upper Epiphysis of the Femur (Lantern Demonstration).
PHILIP D. WILSON, Boston.
Discussion to be opened by WILLIS C. CAMPBELL, Memphis, Tenn., ARMITAGE WHITMAN, New York, and W. R. CUBBINS, Chicago.
4. The Treatment of Spastic Paralysis, with Special Reference to the Stoeffle Operation (Moving Picture Demonstration). FRANK D. DICKSON, Kansas City, Mo.
Discussion to be opened by A. BRUCE GILL, Philadelphia; JOHN RITTER, Chicago, and J. S. SPEED, Memphis, Tenn.
5. Again the Operation for Hallux Valgus (Lantern Demonstration). ALBERT E. FRIEBERG, Cincinnati.
Discussion to be opened by JOHN L. PORTER, Chicago, and DAVID SILVER, Pittsburgh.
6. Synovectomy and Fat Pad Removal of the Knee (Lantern Demonstration). ARTHUR STEINDLER, Iowa City.
Discussion to be opened by NATHANIEL ALLISON, Boston; ALLEN B. KANAVEL, Chicago; ELLIS W. JONES, Los Angeles, and FRANK D. DICKSON, Kansas City, Mo.
7. Backache. JOEL E. GOLDTHWAITE, Boston.
Discussion to be opened by THEODORE A. WILLIS, Cleveland; JOHN RIDLON, Chicago, and H. L. LANGNECKER, San Francisco.
8. Physiotherapy in Orthopedic Surgery (Lantern Demonstration). RICHARD KOVACS, New York.
Discussion to be opened by CHARLTON WALLACE and HERBERT M. BERGAMINI, New York, and JOHN P. LORD, Omaha.

Thursday, June 12—2 p. m.

9. Synovectomy of the Knee Joint (Lantern Demonstration).
J. S. SPEED, Memphis, Tenn.
Discussion to be opened by ELLIS W. JONES, Los Angeles; GEORGE DE TARNOWSKY, Chicago, and GEORGE E. BENNETT, Baltimore.
10. Maintaining Length and Position in the Treatment of Compound Fractures (Lantern Demonstration).
H. WINNETT ORR and J. E. M. THOMSON, Lincoln, Neb.
Discussion to be opened by S. FOSDICK JONES, Denver; F. G. DYAS, Chicago, and F. J. GAENSLEN, Milwaukee.
11. Conservative Treatment of Compound Fractures.
WALTER G. STERN, Cleveland.
Discussion to be opened by T. TURNER THOMAS, Philadelphia; KARL A. MEYER, Chicago, and R. H. McKAY, Akron, Ohio.
12. Chairman's Address: Orthopedic Preventive Medicine.
HENRY B. THOMAS, Chicago.
13. Injuries to the Low Back in Their Relations to Industrial Accidents (Lantern Demonstration).
E. G. BRACKETT, Boston.
Discussion to be opened by DEAN LEWIS, E. L. JENKINSON and PAUL B. MAGNUSSON, Chicago, and ROBERT CAROTHERS, Cincinnati.
14. The Diagnosis and Treatment of Vascular Diseases of the Extremities (Lantern Demonstration).
BARNEY BROOKS, St. Louis.
Discussion to be opened by MONT R. REID, Cincinnati; VICTOR D. LESPINASSE, Chicago, and BERTRAM BERNHEIM, Baltimore.
15. Industrial Rehabilitation. R. M. LITTLE, Albany, N. Y.
Discussion to be opened by WILLIAM S. O. SHERMAN, Pittsburgh; JOEL E. GOLDTHWAITE, Boston, and HARRY E. MOCK, Chicago.

Friday, June 13—2 p. m.

Election of Officers

16. Fibrous Ankylosis of the Hand Due to Prolonged Swelling.
A. BRUCE GILL, Philadelphia.
Discussion to be opened by ALBERT H. FREIBERG, Cincinnati; ALLEN B. KANAVEL, Chicago, and BARNEY BROOKS, St. Louis.
17. Syphilitic Spondylitis (Lantern Demonstration).
ROBERT B. COFIELD and KARL F. LITTLE, Cincinnati.
Discussion to be opened by M. J. HUBENY and E. J. BERKHEISER, Chicago, and J. ARCHER O'REILLY, St. Louis.
18. Kahler's Disease of the Tarsal-Scaphoid (Lantern Demonstration). FREDERICK C. KIDNER, Detroit.
Discussion to be opened by LEONARD W. ELY, San Francisco, and PHILIP LEWIN, Chicago.
19. Tuberculosis of the Knee. The Importance of Early Diagnosis (Lantern Demonstration).
NATHANIEL ALLISON, Boston.
Discussion to be opened by RUSSELL A. HIBBS, New York; E. W. RYERSON, Chicago, and MELVIN S. HENDERSON, Rochester, Minn.
20. Giant Cell Tumors of the Long Bones (Lantern Demonstration). HENRY W. MYERDING, Rochester, Minn.
Discussion to be opened by D. B. PHEMISTER and E. W. BEASLEY, Chicago.
21. Posterior Arthrotomy of the Hip Joint (Lantern Demonstration). FRANK R. OBER, Boston.
Discussion to be opened by PHILIP D. WILSON, Boston, and H. WINNETT ORR, Lincoln, Neb.
22. Spondylitis Following Cerebrospinal Meningitis (Lantern Demonstration). R. WALLACE BILLINGTON, Nashville.
Discussion to be opened by H. WINNETT ORR, Lincoln, Neb., and GEORGE E. BENNETT, Baltimore.
23. The Diagnosis of Early Joint Tuberculosis.
ALLAN D. SMITH, New York.
Discussion to be opened by HERMAN L. VON LACKUM, New York.

SECTION ON GASTRO-ENTEROLOGY AND PROCTOLOGY

MEETS ON MUNICIPAL PIER

OFFICERS OF SECTION

Chairman—FRANKLIN W. WHITE, Boston.
Vice-Chairman—RALPH W. JACKSON, Fall River, Mass.
Secretary—SIDNEY K. SIMON, New Orleans.
Executive Committee—H. W. SOPER, St. Louis; J. RAWSON PENNINGTON, Chicago; FRANKLIN W. WHITE, Boston.

Wednesday, June 11—2 p. m.

1. Chairman's Address: The Modern Examination of a Patient with Chronic Intestinal Disease.
FRANKLIN W. WHITE, Boston.
2. Quantitative Test of Digestive Pancreatic Activity (Lantern Demonstration). ANTHONY BASSLER, New York.
Discussion to be opened by HARLOW BROOKS, New York, and DANIEL N. SILVERMAN, New Orleans.
3. Phenoltetrachlorphthalein Test of Liver Function: Studies with Author's Method. S. M. ROSENTHAL, Baltimore.
Discussion to be opened by B. W. FONTAINE, Memphis, Tenn., and A. H. AARON, Buffalo.
4. Comparative Studies in Liver Function by Some of the Later Methods.
GEORGE MORRIS PIERSOL and H. L. BOCKUS, Philadelphia.
Discussion to be opened by T. G. SCHNABEL, Philadelphia, and A. A. JONES, Buffalo.
5. Diagnostic Errors Leading to Uncalled for Appendectomy.
HENRY WALD BETTMAN, Cincinnati.
Discussion to be opened by JAMES T. PILCHER, Brooklyn, and CHARLES D. AARON, Detroit.
6. A Diet for Chronic Intestinal Disease.
JOHN BRYANT, Boston.
Discussion to be opened by LOUIS M. GOMPERTZ, New Haven, Conn., and E. H. GAITHER, Baltimore.

7. Faulty Food Factors and Atonic Constipation (Lantern Demonstration). FRANCIS LOWELL BURNETT, Boston.
Discussion to be opened by LEON BLOCH, Chicago, and I. H. LEVY, Syracuse, N. Y.
8. The Unrecognized Clinical Importance of Anal Pruritus (Lantern Demonstration). J. F. MONTAGUE, New York.
Discussion to be opened by R. W. JACKSON, Fall River, Mass., and L. J. HIRSCHMAN, Detroit.

Thursday, June 12—2 p. m.

9. Motility of the Stomach after Local Resection for Gastric Ulcer (Lantern Demonstration).
W. HOWARD BARBER, New York.
Discussion to be opened by A. J. CARLSON, Chicago, and L. T. LEWALD, New York.
10. Duodenal Ulcers. W. C. MACCARTY, Rochester, Minn.
Discussion to be opened by SIDNEY STRAUSS, Chicago, and WILLIAM LITTERER, Nashville.
11. A Clinical Study of the Effects of Magnesium Sulphate in Biliary Drainage. HORACE W. SOPER, St. Louis.
Discussion to be opened by B. B. VINCENT LYON, Philadelphia, and MAX DREYFOOS, Cincinnati.
12. Roentgenologic Diagnosis of Disease of the Gallbladder (Lantern Demonstration).
R. D. CARMAN, Rochester, Minn.
Discussion to be opened by A. W. GEORGE, Boston, and L. G. COLE, New York.
13. Diaphragmatic Hernia, Especially Hernia of the Stomach Through the Esophageal Hiatus (Lantern Demonstration). L. B. MORRISON, Boston.
Discussion to be opened by D. F. JONES, Boston, and MILTON M. PORTIS, Chicago.
14. Some Observations on the Presence of Free Hydrochloric Acid in the Gastric Contents in Carcinoma of the Stomach. JULIUS FRIEDENWALD, Baltimore.
Discussion to be opened by FRANK SMITHIES, Chicago, and JOSEPH SAILER, Philadelphia.
15. Gastric Secretory Disturbances.
ELMER L. EGGLESTON, Battle Creek, Mich.
Discussion to be opened by C. W. DOWDEN, Louisville, Ky., and DOUGLAS VANDERHOOF, Richmond, Va.

Friday, June 13—2 p. m.

Election of Officers

16. Ileocecal Tuberculosis from a Surgical Standpoint.
JEROME M. LYNCH, New York.
Discussion to be opened by DAVID M. BERKMAN, Rochester, Minn., and J. RAWSON PENNINGTON, Chicago.
17. The Pathology and Therapy of Chronic Ulcerative Colitis.
BURRILL B. CROHN, New York.
Discussion to be opened by GEORGE C. MIZELL, Atlanta, Ga., and SIDNEY A. PORTIS, Chicago.
18. Vitamin B and Gastric Motility (Lantern Demonstration).
GEORGE R. COWGILL, New Haven, Conn.
Discussion to be opened by A. B. LUCKHARDT, Boston, and ALLAN EUSTIS, New Orleans.
19. Changes in the Liver Associated with Infection of the Appendix (Lantern Demonstration).
CHARLES G. HEYD, New York.
Discussion to be opened by JOHN A. LICHTY, Clifton Springs, N. Y., and C. A. ELLIOTT, Chicago.
20. Rectal Pathology in the Negro—Incidence and Peculiarities (Lantern Demonstration).
CURTICE ROSSER, Dallas, Texas.
Discussion to be opened by RUDOLPH MATAS, New Orleans, and H. A. ROYSTER, Raleigh, N. C.
21. Intestinal Protozoan Parasites.
F. GREGORY CONNELL, Oshkosh, Wis.
Discussion to be opened by J. M. BLACKFORD, Seattle, and JOHN A. WITHERSPOON, Nashville, Tenn.

SECTION ON MISCELLANEOUS TOPICS

MEETS ON MUNICIPAL PIER

OFFICERS OF MEETING ON ANESTHESIA

Chairman—JAMES T. GWATHMEY, New York.
Vice-Chairman—E. I. MCKESSON, Toledo, Ohio.
Secretary—ISABELLA C. HERB, Oak Park, Ill.

Wednesday, June 11—9 a. m.

1. Chairman's Address: Painless Childbirth by Synergistic Methods (Lantern Demonstration).
JAMES T. GWATHMEY, New York.
2. Further Studies in Metabolism in Relation to Anesthesia (Lantern Demonstration). A. E. GUEDEL, Indianapolis.
3. A Report on Colonic Anesthesia (Lantern Demonstration). HERBERT WILLY MEYER, New York, and BURTIS F. ROBBINS, Salt Lake City.

SYMPOSIUM ON ETHYLENE

4. Introductory Remarks. ARNO B. LUCKHARDT, Chicago.
5. Blood Changes Under Ethylene-Oxygen Anesthesia (Lantern Demonstration). C. D. LEAKE, Madison, Wis.
6. Ethylene-Oxygen Anesthesia in General Surgery.
ARTHUR DEAN BEVAN, Chicago.
7. Etheylene-Oxygen Anesthesia in Obstetrics.
N. SPROAT HEANEY, Chicago.
8. Ethylene-Oxygen Anesthesia in Dentistry.
M. ECKER, New York.
Discussion of Papers 4, 5, 6, 7 and 8 to be opened by DEAN LEWIS, D. B. PHEMISTER, CAREY CULBERTSON and HERMAN L. KRETSCHMER, Chicago.

OFFICERS OF MEETINGS ON RADIOLOGY

Chairman—W. F. MANGES, Philadelphia.
Vice-Chairman—ALBERT SOILAND, Los Angeles.
Secretary—M. J. HUBENY, Chicago.

Thursday, June 12—9 a. m.

1. Chairman's Address. W. F. MANGES, Philadelphia.
2. Roentgen-Ray Studies in Hydrocephalus (Lantern Demonstration). P. M. HICKEY, Ann Arbor, Mich.
Discussion to be opened by GEORGE L. DAVENPORT, Chicago.
3. A Radiographic Study of the Infant's Chest as Seen at Birth. W. WALTER WASSON, Denver.
Discussion to be opened by CHARLES C. GRANDY, Fort Wayne, Ind.
4. Radiographic Localization of Lung Abscess with the Hirtz Compass: Preliminary Report (Lantern Demonstration). L. R. SANTE and EDWIN P. LEHMAN, St. Louis.
Discussion to be opened by EDWIN S. BLAINE, Chicago, and EVARTS A. GRAHAM, St. Louis.
5. The Importance of Careful Roentgen-Ray Investigations of Apical Chest Tumors (Lantern Demonstration).
HENRY K. PANCOAST, Philadelphia.
Discussion to be opened by WILLIAM A. EVANS, Detroit.
6. Some Observations on the Use of the Roentgen Rays in the Diagnosis of the Pericardium (Lantern Demonstration). GEORGE W. HOLMES, Boston.
Discussion to be opened by PAUL DUDLEY WHITE, Boston.
7. Results of Medical Treatment of Gastric Ulcer as Observed by Serial Roentgenography.
LOUIS GREGORY COLE, New York.
Discussion to be opened by BERTRAM W. SIPPY, Chicago.
8. A Study of Thirty-One Cases of Complete Transposition of the Viscera, with Remarks on Etiology (Lantern Demonstration). LEON T. LEWALD, New York.
Discussion to be opened by JAMES T. CASE, Battle Creek, Mich.

Friday, June 13—9 a. m.

9. Studies on the Effect of Roentgen Rays on Glandular Activity; The Effect on Gastric Secretion of Exposure of the Abdominal and Thoracic Areas in Roentgen Rays; A Note on Roentgen Cachexia (Lantern Demonstration). A. C. IVY and B. H. ORNDOFF, Chicago.
Discussion to be opened by CHARLES L. MARTIN, Dallas.
10. The Reaction of Different Types of Abdominal Tumors to Radiation. A. U. DESJARDIN, Rochester, Minn.
Discussion to be opened by GEORGE E. PFAHLER, Philadelphia.
11. End-Results Observed in Carcinomas of the Uterine Cervix with Radium and Roentgen-Ray Therapy (Lantern Demonstration). HENRY SCHMITZ, Chicago.
Discussion to be opened by JOHN F. MCCULLOGH, Pittsburgh.
12. Comments on the Use of Radium for Intra-Oral Cancer.
ALBERT SOILAND, Los Angeles.
Discussion to be opened by FRANK E. SIMPSON, Chicago.
13. The Treatment of Hyperthyroidism by the Roentgen Ray: Results in One Hundred and Twenty-Five Cases.
THOMAS A. GROOVER, A. C. CHRISTIE and E. A. MERRITT, Washington, D. C.
Discussion to be opened by ROBERT G. ALLISON, Minneapolis.
14. Relations of Roentgen-Ray Signs to Symptoms in Duodenal Ulcer. A. W. CRANE, Kalamazoo, Mich.
Discussion to be opened by E. C. ERNST, St. Louis.
15. The Pathologic Basis for Irradiation of Tonsils.
W. W. WATKINS, Phoenix, Ariz.
Discussion to be opened by ROBERT A. ARENS, Chicago.

THE EXHIBIT

Unusual Showing of Accessories to Medical Practice

The total of material, equipment and supplies needed in the practice of medicine represents a tremendous volume. Almost every medical advance calls for the manufacture of something, so that the new idea may have practical application.

An exhibit of manufacturers catering to the needs of the medical profession in 1824 would have been a rather small affair. So great has been the progress of medicine that a technical exposition, such as will be conducted in connection with the 1924 session of the American Medical Association at the Chicago Municipal Pier, is an education in itself. It will reveal in attractive and convenient display the thousands of items that industry makes available for the physician's use. These aids to the medical profession—instruments, apparatus, books, pharmaceuticals, foods, roentgen-ray and electrotherapeutic equipment—are all brought into being and exist because of the physician's demand for them.

The technical exhibit represents the survival of the fittest. An inferior article dies an early death, as a result of its own shortcomings. The successful product is one that fills a real need, and its manufacturer leaves nothing undone in perfecting it. It stays on the market.

Many of the men that will be met at the exhibits are highly specialized technicians keenly sensitive to each step of progress in the branch of medicine in which his merchandise is used.

The exhibits will be worth careful study. Valuable information will be found in every section. Attendants will show the practical application of their goods to every day work. The physician may buy or simply remain an interested prospect, and he will not be unduly importuned.

If the visitor has long been seeking some certain appliance, instrument, pharmaceutical or other item, he will probably be able to locate it among the technical exhibits. Whatever it is and wherever it may be found, there will also be a representative prepared to answer questions, explain the details and give information not found in books or lectures.

Since most of the activities of the Annual Session will be housed in the Pier building, Fellows will be saved a considerable amount of time. This may be employed pleasantly and profitably by a study of the exhibits. Exhibit Hall should be made a rendezvous for the periods between meetings and for the extra time available in the morning or evening.

Below are given brief descriptions of features in Exhibit Hall. This does not include all the exhibits, as some exhibitors' descriptions failed to come in before this issue went to press. The items, however, are representative, and it is suggested that the visitor check off those that he wants to see first. Exhibit Hall opens Monday, June 9, at noon, and closes Friday, June 13, at noon.

WILL C. BRAUN,
Director of Exhibits.

BOOKS

An unbroken sequence of three years of an international abstract service may be inspected in the American Institute of Medicine booth, No. 167. Approximately 17,000 abstracts, the entire material for one year, occupies a 4½ foot book shelf. This arrangement will be shown as well as the 8 to 12 inch shelf space holding the 12 numbers of any one specialty.

In the exhibit of D. Appleton Company, space No. 26, will be featured the new George Blumer Edition of Therapeutics now in press; a set of Gynecological and Obstetrical Monographs, just completed in 15 volumes; the first group of Surgical Monographs recently published; and newly revised editions of The Principles and Practice of Dermatology by Pusey, Morris's Clinical Laboratory Diagnosis, Foot's Minor Surgery, Williams' Obstetrics, and other volumes of interest.

Some new monographs on the vital medical problems of the day will be exhibited by P. Blakiston's Son & Co., in space 142, which it would be well for all physicians to see. A wide variety of specialties will be covered in the display, including General Practice, Endocrine Therapy, Ophthalmic Surgery, Orthopedic Surgery, Medical Diagnosis, Surgery of the Rectum, a Clinical Manual of Heart Diseases, and other books of interest.

New Medical Monographs, both American and English, of all publishers will be exhibited by the Chicago Medical Book Company in space No. 145. Ask for their new "Bulletin of Recent Medical Books."

F. A. Davis Company of Philadelphia in Booth No. 40 will feature the following books: Fred J. and John A. Pratt, Intranasal Surgery; S. Calvin Smith, Heart Records, Their Interpretation and Preparation; W. F. Dutton, Intravenous Therapy; Charles C. Miller, Cosmetic Surgery; Correction of Featural Imperfections; Gynecology — Medical and Surgical—by P. Brooks Bland; and Diseases of Middle Life, in two large Royal Octavo Volumes, Frank A. Craig, Editor-in-Chief.

For demonstration and reference helps, Dennoyer Geppert Co. will display in Booth No. 7 their anatomical preparations covering all sections of the human anatomy. Especially complete are the charts on the ear, eye, nose, gynecology, obstetrics and embryology.

A number of old and rare medical items of the 15th, 16th and 17th centuries will be in the display of Paul B. Hoeber, Inc., in Booth No. 143. The regular line of medical books will be augmented by some entirely new publications, such as the Anatomical Charts by Dr. Desjardins of the Mayo Clinic, Elsberg's important new work on "Spinal Cord Tumors" and advance copies of three new volumes of the Annals of Roentgenology, edited by Dr. James T. Chase, including Cohn's "Normal Bones and Joints," Osgood's "Teeth and Jaws" and Stewart's "Skull Fractures."

New 1924 books and new editions published by Lea & Febiger will be shown in their space, No. 144. A wide field of interest is covered in the following titles on display: Cushny's Pharmacology and Therapeutics; Joslin's Treatment of Diabetes Mellitus; Joslin's Diabetic Manual; Braun's Local Anesthesia; Cabot's Modern Urology; Bacon, Obstetrical Nursing; Newmayer's Medical and Sanitary Inspection of Schools; Price's Hygiene and Public Health; Mulliner's Elementary Anatomy and Physiology; Politzer's Diseases of the Ear.

Among the titles just published and to be exhibited by J. B. Lippincott Company in their space, No. 152, are "The Human Testicle," by Thorek, Wilson-Bradbury's "Internal Medicine," Reid's "The Heart in Modern Practice," Howard's "Practice of Modern Surgery," Feer's "Pediatrics," the seventh edition of Fuchs' "Ophthalmology," Ely's "Inflammation in Bones and Joints," and many other valuable works on Endocrines, Tuberculosis, together with their regular line of practical medical, surgical, pharmaceutical and nursing books. The Piersol Anatomical Charts, fifty in number, will also be displayed.

An historical section of medical works will be exhibited by Login Brothers in space No. 98. These will include Dalton's Brain, Macewen's Atlas of Head Sections, and Diseases of Brain and Spinal Cord, Frost's Fundus Oculi, Starr's Atlas on Nerve Cells, Liebrich's Atlas Ophthalmoscopic, and all Saunders' hand atlases that are out of print, also a list of medical journals in sets.

Not a "one man book" is the second revised edition of Anesthesia, which will be displayed by the Macmillan Company in Booth 78. Dr. Gwathmey is the author, but the book embodies the experiences of nine other authorities in the field

of Anesthesia. Another feature will be the translation of a German textbook of Psychiatry (Bleurer's Textbook of Psychiatry), in English, by A. A. Brill. The first two volumes of the Modern Hospital Library Series will also be on display.

A collection of selected titles from various publishers will be displayed by L. S. Matthews & Co. in space No. 16. Included in the display will be some antique volumes of Beaumont, Laennec, Thache Gross, Trousseau, and others.

A complete line of medical publications, including a number of new editions, will be shown by the C. V. Mosby Company in Booth 141. The new books include Clendening's Modern Methods of Treatment; Foxworthy's Life Insurance Examinations; Kantor's Disorders of Digestion; Webster's Anesthesia; Levinson's Examination of Children; Hertzler's Anesthesia; Watson's Hernia; Gurd's Infection and Immunity.

A Loose Leaf Living Medicine in seven volumes will be exhibited by Thomas Nelson and Sons in Booths 110 and 113. This work contains an additional Index Volume and Medical Service Volume for the filing of their semi-annual Surveys of the Medical Literature in all languages. Since the publication of this work, four years ago, a large number of the articles have been revised to include the results of recent research and discovery.

The American Frohse Life Size Anatomical Charts will be shown in the exhibit of A. J. Nystrom & Company, Booth No. 64. Those of the medical profession who may not know these scientific charts will have excellent opportunity to inspect them.

Loose Leaf Medicine and Loose Leaf Surgery, with the service attending these, are to be displayed by the Oxford University Press at Booth No. 65. There will also be shown individual monographs of interest to Internists and Surgeons.

The W. F. Prior Company will exhiblt their Threefold Unit of Service in spaces Nos. 59 and 60. This is a digest of 225 monthly journals. New pages, constituting the accredited advances in medicine, are issued from time to time and the out of date material is discarded. This service will be explained in detail.

The entire list of 300 or more publications of W. B. Saunders Company will be exhibited in Booths 35 and 36. Special display will be given to new books and new editions including Bickham's six volume work on Operative Surgery; the new Mayo Clinic volume; new edition of Cotton's Dislocations and Joint Fractures; new edition of Kolmer's Infection, Immunity and Biologic Therapy; new edition of the American Illustrated Medical Dictionary; new edition of Kerley's Practice of Pediatrics, and Reynolds & Macomber's new work on Fertility and Sterility.

William Wood & Company in Booth No. 39 will exhibit specimen copies of their newer medical and surgical books. These will include Kerr & Ferguson's Obstetrics and Gynecology; De Quervain's Goitre; International Medical Annual (42nd year); Cammidge's Insulin Treatment; Chiene's Handbook of Surgery; Dally's High Blood Pressure; Heatherly's Heart Disease; Jones & Lovett's Orthopedic Surgery; Mummery's Rectum and Colon; Orrin's Emergency Operations, and the Reference Handbook of Medical Sciences.

CLOTHING

To those physicians interested in the subject of faulty posture, the Spencer Supporting Corsets and Belts exhibited in Booth No. 134 will show clearly the different supports that are used for the relief of such conditions as floating kidney, sacro-iliac sprain, enteroptosis, etc. The Spencer Supporting Corsets and Belts are made by the Berger Bros. Co.

Wallace's Linen Mesh Underwear will be exhibited in space No. 96 by the Linen Underwear Co. A special discount of 20 per cent. is allowed to physicians and their families who register at this booth during the convention, and whenever necessary special measurements will be taken to insure perfect fitting underwear, both in union suits and shirts and drawers made in all popular styles.

The A. E. Little Shoe, distinctive for its arch supporting, suspension construction, will be exhibited in space 13-A. The manufacturer, the A. E. Little Company, will have competent representatives present to explain to physicians the comfort-giving advantages of this shoe, which has the sole, upper, counter and insole stitched together at the shank so as to form a flexi-rigid support. Special concessions will be given to visiting physicians who may wish to order the shoe for their personal use.

Mandel Bros. of Chicago manufacture the uniforms worn by their own professional people, and have developed an extensive variety of good looking, good fitting models, which will be shown in Booth A 15.

An exhibit of the Trail Blazer Shoe, designed and produced under the supervision of the Women's Foundation for Health, will be shown in space No. 85. How the foundamental requirements of a real health shoe—flexible shank, straight inside line, roomy toe, low heel—have been preserved even in the dress model, will be demonstrated.

A complete line of washable uniforms which are made specially to your order will be shown by the Weissfeld Mfg. Co. in space No. 169. Office coats, outing suits, operating gowns, shirts with detachable sleeves, waterproof bed sheets, aprons, caps, etc., will be included in the exhibit.

FOODS AND BEVERAGES

The Chicago Dietetic Supply House will have an exhibit of special foods and equipment in space No. 126. A graduate dietitian will be in charge to discuss the products of this house with those interested in well balanced diets in connection with the use of Insulin.

Canada Dry Ginger Ale will exhibit in space No. 72. Physicians, nurses and dietitians will receive samples of this ginger ale. Mr. Rafael C. Brewster will be in charge.

The Kellogg Company will exhibit their food products in space No. 168. Miss Mary I. Barber, director of their Home Economics Department, will be in charge. Kellogg's Corn Flakes, Kellogg's Bran, cooked and krumbled, and Kellogg's all wheat Krumbles will be demonstrated and served.

Postum Cereal Company, in their exhibit, space No. 68, will feature and serve a different product each day of the week to their visitors. A special feature of hospitality will be a gift carton containing full size packages of Post Toasties, Grape Nuts, Post Bran Flakes, Postum and Malted Grape-Nuts for each visitor.

You may be refreshed with grape juice if you stop at the exhibit of the Welch Grape Juice Company in space No. 166. The representative in charge will be glad to give you a copy of "Grape Juice as a Therapeutic Agent." It is a book which has been especially prepared for physicians, nurses and dietitians.

INFANT FOODS AND SUPPLIES

At the exhibit of the American Association of Milk Commissions, in spaces Nos. 75 and 76, a stereomotograph will be in operation, giving in detail the production, handling and delivery of Certified Milk. Descriptive literature on Clean Raw Milk will be distributed and a refreshing glass of Certified Milk will be served to visitors.

The Borcherdt Malt Extract Company will exhibit at space No. 62, showing their Malt and Cod Liver Oil products, especially Malt Cod Liver Oil and Iron Iodide, and Malt Cod Liver Oil and Phosphorus. Borcherdt's Malt Sugar, also Malt Soup Extract, conforming to the Kellar formula, will be exhibited. Register at this booth and receive either samples or literature.

The exhibit of the J. A. Deknatel Company, in space No. 67, will reproduce a section of a nursery with each crib containing a large baby-like doll wearing a Nursery Name necklace. At intervals, during each day, a demonstration will be given which will show how mistakes of identity may be prevented in the obstetrical nursery.

A practical souvenir will be given to physicians who will visit the Dry Milk Company booth, in space No. 125. Two infant feeding products, Dryco and Protolac, will be exhibited.

Horlick's Malted Milk Company will present, in space No. 31, their Original Malted Milk for the feeding of infants, growing children, invalids and the convalescent. They will demonstrate the new Dumore Mixer, Model No. 46, for preparing Horlick's Malted and barium sulphate as a suspension medium in X-ray diagnosis.

At Booths Nos. 46 and 49 Mead, Johnson and Company will exhibit and demonstrate their various infant diet materials and baby scales. Their line consists of a wide range of products which are adaptable to the nutritional requirements of the individual baby.

The Merrell-Soule Company, as a part of their exhibit in spaces Nos. 139 and 140, will have a fully equipped laboratory where their products will be subjected to a routine of tests. Another feature will be the serving of ice cold Klim (whole milk) and chocolate covered powdered milk wafers.

Ernest Monnier, Inc., in their Booth, No. 6, will emphasize the sterilization feature of their Ingram Transparent Nipples, made from the best grade Para rubber, without the addition of fillers, gritty substances, coloring matter or other deleterious compounds. A full line of Ingram Rubber Surgical Goods will be on display.

INSTRUMENTS AND APPARATUS

In Booth No. 153 will be found the exhibit of A. S. Aloe Company. To be seen there will be a new deep therapy lamp; many new model instruments received from abroad; something new in genito-urinary instruments; and office equipment.

Ambulatory Pneumatic Splints for the reduction and treatment of fractured hips, thighs, legs, ankles and arms will be on display by the Ambulatory Pneumatic Splint Mfg. Co., in space No. 58. X-ray pictures of fractures before and after being reduced by this splint will be shown. Other improved orthopedic appliances will also be shown.

Space No. 159 will contain the exhibit of C. R. Bard, Inc., who will show many models of Urological Instruments. Recent arrivals from abroad enable this firm to show a more complete line than heretofore with several novelties new to the medical profession of this country.

The Bard Parker Company, Inc., will exhibit, at Booth No. 119, a complete display of the Bard-Parker Knife, including their new No. 12 blade. This is a curved bistoury, fitting the No. 3 handle, the same as the No. 10 and 11 sizes. This blade, as well as the other sizes, are displayed for your inspection.

Becton, Dickinson & Company, Rutherford, N. J., believe that the physicians who visit the exhibits at the A. M. A. Convention are mostly interested in new items. They will feature in space 18, such new articles as were perfected within the last year, viz., Luer Lok Control Syringes, Luer Insulin Syringes, Yale Luer Lok Needles, B-D Manometer, Asepto Syringes—two-, three- and four-ounce capacity and Asepto Breast Pump.

The Cambridge and Paul Instrument Company, in space No. 91, will exhibit the Hindle-American Electrocardiagraph Apparatus, along with other scientific instruments of precision. The Alveolar Air Apparatus and the Ray-Track Indicator are also to be displayed.

Practical demonstrations of the value of Transillumination, Direct Illumination, and Electro-Cauterization, as applied to major and minor diagnostic, operative and therapeutic procedure will be given daily by Cameron's Surgical Specialty Company, in Booths No. 3-A and No. 154.

The Central Scientific Company, in space No. 92, will show apparatus and glassware for modern methods of clinical diagnosis and physiological, biochemical and bacteriological analysis, including apparatus for syphilis diagnosis and blood and urine chemistry.

The Chronokymograph, an instrument which records each respiration graphically, and the Roth Metabolism Apparatus will be featured in the display of Warren E. Collins, in space No. 52. There will also be shown the Benedict Student Respiration Apparatus, the Collins "Chain-Compensated" Gasometer and numerous Metabolism Accessories. This firm is prepared to construct all types of Benedict Respiration Apparatus, including chambers for animals as well as for humans.

Various styles of De Vilbiss atomizers for professional use and prescription purposes will form the display of the De Vilbiss Manufacturing Company in Booth No. 38.

Electro Surgical Instrument Company, in space No. 20, will show special outfits, such as an improved pneumatic Auriscope, a Hare-Marple Ophthalmoscope and an illuminated Tongue Depressor with detachable wooden blades, all designed to operate from a universal battery handle. A complete line of instruments for the work of the general practitioner, as well as instruments for the use of specialists, are included in this exhibit.

In space No. 2-A the Foregger Company will exhibit the "Seattle Model," portable ethylene Gwathmey Outfit, as designed by Dr. John S. Lundy of Seattle, Wash.; also a large hospital ethylene model.

Quarts Light Equipment will be exhibited by the Hanovia Chemical & Mfg. Company in Booths No. 53, No. 54, No. 55, and No. 56. Their new addition, the Luxor Lamp, which carries the same burner intensity and the same radiation dosage as the Alpine Sun Lamp, has been constructed without the refinements of the others, and is, therefore, much lower in cost.

One Esmarch Tourniquet will be given complimentary to every doctor registering at the booth of the Harold Surgical Corporation at spaces Nos. 94 and 95. There will be displayed a complete line of surgical dressings and specially priced surgical instruments, part of purchases of U. S. Army Surplus Medical and Hospital supplies.

An Ethylene attachment for administering Ethylene, Nitrous Oxid and Oxygen synergistically, manufactured to be used with any machine on the market, will be shown by the Heidbrink Company in space No. 8. The Heidbrink Junior Anesthetizer, an apparatus including two tanks self contained in a carrying case, will also be shown.

A display of Surgical and Deformity Appliances will be shown by the Illinois Surgical Appliance Company, in Booth No. 101. You will see there Human Osteology preparations, such as fetal, infant and adult Skeletons, Skulls, etc., and Human Anatomical parts prepared by secret process, in the natural colors.

The Jaeckh Manufacturing Company, in space No. 61, will demonstrate the Robertson Anesthesia and Suction Cabinet. A full line of hand and electrically operated compressed air and vacuum apparatus for ear, nose, throat and sinus treatments, together with medical and sanitary atomizers and sprayers, will be included.

An adjustable, portable light for major operations will be displayed by the Johnson Ventlite Company in space No. 66. This is known as the Surgeon's Operating Ventlite and it throws a bright illumination to the depth of any incision. It is efficient for deep abdominal and perineals. The new Ventlite Therapeutic Lamp will also be displayed.

Two new specialties will be shown by the Kloman Instrument Company, Inc., in their Booth. No. 104. These are the Kloman Ear Vibrator and the Specialist's Treatment Case. They will also have a line of rustless and stainless instruments and the Davis Mouth Gag on display.

A Blood Pressure Recorder, which writes by curve the blood pressure and permits an automatic control, will be featured by E. Leitz, Inc., in their space, No. 63; also a Binocular Loupe for ear, nose and throat examinations. Included in the display will be the Epstein Micro-Saccharimeter, by which the practitioner can determine sugar in blood.

Specialties will be featured in the display of David B. Levy, in space No. 19, such as Levy Luer Hypodermic All Glass Syringes and the Levy Hypodermic Needles. Other items will be Levy's Clinical Thermometers, Prismatic and Aseptic, which has markings under the glass. Articles exhibited (not War Surplus Goods) will be Adhesive Tape, Professor Von Herf's Woundlip Clips and Levy's Iodized Ligatures.

Middlewest Laboratories Company, in space 28, will feature the Metabolimeter and accessories for making basal metabolic rate determinations. Demonstrations will be made on normal subjects and the complete test followed through to the final result which requires less than five minutes. Clinical applications will be discussed for those unfamiliar with the subject.

V. Mueller & Company will exhibit their instruments and appliances in Booths No. 29 and No. 30. A new and improved ether-vacuum apparatus will be demonstrated as well as several improved types of heavy-duty eye magnets, high-frequency treatment apparatus, and various types of electro-surgical instruments.

The Pelton and Crane Company will show several of the new "Lincoln Model" Combination Sterilizers in their display, Booth No. 69. These sterilizers have provision for the sterilization of intruments, dressings and water. The "Pelton" Automatic Electric Air Compressor, Diagnostic Lamp Set and a new Electric Vaporizer will be among the Pelton and Crane exhibits.

Pfau's American Instrument Company will show their Ear, Nose and Throat instruments in space No. 9; also some novelties, including Seiffert's (Killian) new Direct Autoscope; Eichen's Safety Pin Extractor; Gruenwald's latest Conchotome; "The Aural Speculum" opening; "The Nasal Speculum" (Tieck's); Cutting Instruments for ear, nose and throat and Anatomical Specimens.

The Reeve Instrument Shop will have on display in their Booth, No. 2, a stereoscope equipped with illuminating boxes for placing radiographs in center of box and angulation of radiographs. The mirror box and illuminating boxes coordinate in movements and there is a stereo-binocular lens attachment for focusing and magnifying radiographs.

The Sanborn Company will show the new Kymograph, which shows respirations during metabolism tests, in Booth No. 146. Tests will be in progress during the day and you may take tracings with the Sanborn Pulse Wave Recorder yourself. The Sanborn Blood Pressure sphygmomanometer is to be displayed in Booth No. 4-A. The Master Gage will tell you exactly the dead weight accuracy of any gage.

The Roth Oxygentherapy Apparatus will be demonstrated by the Sanitarium and Hospital Equipment Company, in spaces No. 5-A, 6-A, 7-A, and 8-A. This is a new machine for the administration of oxygen in concentrations of 30 to 50 per cent. or more. It is for use in pneumonia and in the anoxemia of pulmonary edema, or cardiac insufficiency, and in general, whenever persistent cyanosis is present.

A motion picture camera which requires no cranking will be shown in Booth No. 169 by the Sept Motion Picture Camera Company. This camera handles standard size motion picture film. Just press the button and it works automatically. The Sept Motion Picture Camera will record observations in nervous disorder cases, hospital work, operations, or take movies, snapshots and stills.

Siebrandt's "Eveready" Fracture Appliances, which will be exhibited at space No. 114, comprise a line of modern aluminum Extension Apparatus, Leg and Armsplints and other important surgical instruments. A new feature of the Universal Armsplint is an attachment which permits the splint to be used in conjunction with a body cast. The new Aluminum fore-arm splint is to be shown.

C. M. Sorenson Co., Inc., will exhibit in spaces No. 74 and 77 a series of three distinct hospital combination units for etherizing and aspirating, independently or combined; specifically for the utility of hospitals. They will also exhibit their complete new model of 1924, Just-It Specialist Outfit, Specialist's Chairs, Tankless Air Compressors, Bath-O-Mizer, and Adjustable Lamp Fixtures.

The Toledo Technical Appliance Company will exhibit their equipment in Booth No. 127. You may see there the McKesson Surgical Pump for use in abdominal, chest, nose and throat operations; the McKesson Anesthetic Appliances for etheylene-oxygen and gas-oxygen anesthesia; and the new recording Metabolor, which writes the curve of a patient's metabolism.

The outstanding feature of the Wilmot Castle Company display of sterilizers at Booth No. 51 will be the showing of a new complete pressure sterilizing equipment for private surgeries, clinics and emergency hospitals. It is compact, combining an autoclave, pressure water sterilizer, water still, instrument sterilizer, table and cabinet. All the electric models of Castle sterilizers with their automatic cut-off, will be shown.

OPTICAL GOODS

The exhibit of the American Optical Company, F. A. Hardy & Company and Merry Optical Company Divisions will be in space No. 132, where they will display Surgical Instruments and Ophthalmological Apparatus.

A complete line of Bausch & Lomb instruments for the examination of the eye will be shown in space No. 160 by the Bausch & Lomb Optical Co. Their exhibit will include medical and laboratory instruments, such as the new pocket miscroscope; haemacytometers, hemoglobinometers, colorimeters, centrifuges, and accessories.

E. B. Meyrowitz Surgical Instrument Company will show in their booth, No. 25, vision and color tests for railroads, industry, and schools; operating, diagnostic and treatment instruments and apparatus used by specialist and general practitioner for the eye, ear, nose and throat. Ophthalmoscopes will be featured and the Wolf Mouth Gag and Tongue Depressor will be demonstrated.

In addition to the standard line of Microscopes, Microtomes, etc., the Spencer Lens Company will show in space No. 128 their new instrument with a more complete substage than heretofore offered. A feature will be the so-called Daylight Screen, and a new automatic projection machine, which uses standard motion picture films in numbers from 20 to 300 and automatically displays them at intervals required.

The latest models of Gullstrand's Slitlamp, large Ophthalmoscopes, Hess' Hammer lamp and new Refractionometer will be exhibited by Carl Zeiss, Jena, in space No. 50. Telescopic Spectacle Trial Cases, Sample Spectacles and Telescopic Magnifiers for weak-sighted and short-sighted eyes, Katral glasses and Punktal lenses can also be inspected. The Urologist will find here the latest models of diagnostic and operating instruments of George Wolf manufacture.

PHARMACEUTICALS

In the Abbott Laboratories, spaces No. 32, 33 and 34, will be displayed such Council accepted products as Acriflavine, Neutral Acriflavine, Argyn, Barbital, Barbital Sodium, Butyn, Butesin, Butesin Picrate, Dichloramine-T, Digipoten, Procaine and other synthetic medicinals and pharmaceutical specialties. The products of the Dermatological Research Laboratories, Aresphenamine, Neoarsphenamine, Sulpharsphenomine and Potassium Bismuth Tartrate will be part of this exhibit.

A line of Endocrine preparations will be shown by Armour and Company in space No. 21, together with other Organotherapeutic agents, featuring thyroids, Corpus Luteum, Pituitary Preparations, Pituitary Liquid and Suprarenalin Solution. Pliable sterile Surgical Catgut Ligatures will be shown for the attention of surgeons.

The P. Astier Laboratories of Paris will exhibit at Booth No. 148, Arheol, the active principle of Sandalwood oil, and Riodine, organic assimilable Iodine. A. Lumiere Laboratories of Lyons will also exhibit at this booth Tulle Gras, a wide mesh, non-adhering, surgical dressing, and their recent product, Cryogenine, an antipyretic and analgesic.

The new system of Hypodermics known as the Cook Carpule System will be exhibited by the Cook Laboratories in spaces Nos. 23 and 24. In this the medication is provided ready for use, in a glass carpule—which is a combination of an ampule and a cartridge. The special hypodermic syringe is loaded, much as you load a cartridge into the breech of a rifle and is well worth seeing.

The exhibit of the General Chemical Company in space No. 48 will be a display of products entering into the manufacture of Sofos—namely, monosodium phosphate, disodium phosphate and sodium bicarbonate. Special emphasis will be placed on the fact that Sofos contains no citric or tartaric acid but is a true effervescent sodium phosphate.

At the exhibit of the Hoffman-La Roche Chemical Works in space No. 129 particulars may be obtained relative to prophylactic campaigns against goiter, and the results. The Iodostarine Chocolate Tablets made by this firm, which have been the prophylactic agent employed, will be featured.

Mercurochrome-220 Soluble will be featured at Booth No. 57 by Hynson, Westcott & Dunning. A handy applicator bottle containing a 2 per cent. solution for first-aid prophylactic and general antiseptic use, will be given to visiting physicians. The new Rosenthal Phenoltetrachlorphthalein Colorimeter for the liver functional test and the Hench and Aldrich Salivary Urea Index-outfit will be among the products displayed.

The subject of the Eli Lilly & Co. exhibit in spaces No. 101 and 102 will be Iletin (Insulin, Lilly). Specimens will illustrate its preparation, and photographs will show phases of manufacture, also charts and photographs will illustrate the physiological action and therapeutic effects of this preparation.

Calcreose will be exhibited by the Maltbie Chemical Company in space No. 42. How it permits intensive creosote medication over long periods of time apparently without gastric disturbance will be explained.

The Maltine Company will display at Booth No. 47 various materials, such as Malted Barley, Wheat and Oats, Pure Cod Liver Oil, Cascara Sagrada, Yerba Santa, etc., which enter into the production of Maltine and its compounds, together with the finished products. Visiting physicians will be given visiting lists, sets of memorandum books and samples.

The standard products of the Metz Laboratories will be exhibited in space No. 149. These include Salvarsan, Neosalvarsan, Silver-Salvarsan, Sulpharsphenamine-Metz, Novocain and Novocain-Suprarenin in powder, tablet and ampule form, Pyramidon, Anaesthesin and Orthoform besides other dependable originals sold by this firm.

The effect of their special dyes and stains on normal and pathologic blood smears and tissues will be shown through a Spencer Projection Microscope by the National Aniline and Chemical Company in space No. 155. Besides this the complete line of biological dyes and stains and Neutral Acriflavine (National) in all its forms will be exhibited.

The E. L. Patch Company will occupy space No. 100 and have for examination Patch's Flavored Cod Liver Oil and Patch's Sugar of Milk.

The Radium Chemical Company in space No. 82 will exhibit instruments for the handling of radium element in tubes and needles, and radon (radium emanation) in implants, tubes, needles, local packs, etc. The instrumentation will be demonstrated and various problems connected with radium work may be discussed with technical and clinical experts in attendance.

G. D. Searle Co. will exhibit an extensive line of standard pharmaceuticals in space No. 1. Besides this, they promise to have easy chairs and sufficient entertainment for you to spend a few minutes with them.

The exhibit of Upsher Smith, Inc., in space No. 17 will consist of a number of growing plants of Digitalis purpurea and D. lutea in flower, with colored and illuminated transparencies, illustrating the chief steps in the production of

Digitalis leaf. These have been specially wintered over at Foxglove Farm near Lake Minnetonka, where the Upsher Smith farm is situated.

E. R. Squibb & Sons in space No. 45 will show their Pollen Allergen Solutions, Sulpharsphenamine and a new dropper bottle of Chloroform. In addition laboratory men will be in attendance to demonstrate with laboratory animals the vitamin value of Squibb's Cod Liver Oil and other tests.

An exhibit of various animal glands and methods of preparing them for medicinal purposes will be shown by the Wilson Laboratories in space No. 27. The manufacture of the various glandular derivatives will be demonstrated as fully as possible.

The Zemmer Company products will be demonstrated in space No. 108, comprising an extensive showing of Ampules, Glandular Products, Eye Ointments, Filled Capsules as well as many new formulae in Lozenges, Tablets, Ointments, etc.

X-RAY AND ELECTROTHERAPY

Two new machines, a Polytherm Generator and a Portable High Frequency machine will be exhibited by the Acme-International X-Ray Company in spaces No. 9-A, 10-A and 11-A. Both of these machines have a new type of spark gap and are capable of doing all classes of Diathermia, Desiccation, Surgical Coagulation and Auto-Condensation. This firm will have other developments to announce when the meeting opens.

The exhibit of the Eastman Kodak Company in Booths No. 156 and 157, will consist of a display of Dupli-Tized X-Ray Films and will feature the new Safety Films which have just been announced. A model X-Ray Laboratory in miniature will also be shown. In addition there will be a display of the possibilities of clinical photography—both still and in motion pictures.

The Engeln Company exhibit, spaces No. 11 and 12, will include the usual line of Engeln Units and Accessories and Keleket Transformers. In addition to these there will be an entirely new and complete line of equipment announced after months of research and test.

Booth No. 165 will be occupied by H. G. Fischer & Co., Inc., with a display of Senior Style "F-O" Diathermy and Electro-coagulation cabinet, a new portable Medical and Surgical Diathermy Apparatus, a refined 30 Milliampere X-Ray Unit and other items of interest.

The Morse Wave Generator will be exhibited by the General X-Ray Company at space No. 117. The one standardized Sine Wave Generator and the new Morse pad electrodes which are now made in all sizes and shapes will be displayed.

The exhibit of the McIntosh Electrical Corporation in spaces No. 14 and 15 will be a demonstration of the growth and development of Electro-Therapy apparatus, including the Hogan Super-Power High Frequency, the 1924 model Universal-mode, the Polysine Generator, and the McIntosh Super-Ray Therapeutic Lamp. For the benefit of physicians who wish to inspect the manufacture of such apparatus, the McIntosh plant will be thrown open to them on Friday afternoon of convention week at 2 p. m.

An apparatus which will permit the roentgenologist or surgeon to get a fluoroscopic screen in close proximity to the incision when a foreign body is being removed with the aid of X-rays is to be shown by the Patterson Screen Company in space 164. Also to be shown in their exhibit is an X-Ray Finder for outlining and localizing areas to be put under treatment by X-Rays.

A new principle in commutation known as Ionized Rectification is employed in the Standard Deep Therapy X-Ray Unit machine to be shown by the Standard X-Ray Company in their display in Booths No. A23, 24 and 25.

A new Water-Cooled Deep Therapy Tube and Cooling System will be shown in the Victor X-Ray Corporation display to be shown in Booths No. 120, 121, 122, 123 and 124. This system is to be used with the Snook Special Combination Deep Therapy and Diagnostic X-Ray equipment also to be shown. The display will include a new line of Air and Water Cooled Quartz Lamps, improved High Frequency equipment, radiographs and the C. D. X. Dental Unit for the inspection of those interested in dental radiography.

The Wappler Electric Company in their spaces No. 130 and 131 will show several new Urological Instruments, including the McCarthy Cysto-Endoscope and a new Infant Catheterizing Cystoscope. Among the High Frequency apparatus is their improved Excell as used by Dr. Wm. L. Clark, and the Wyeth Endotherm which provides means of cutting by the High Frequency current, conforming to the requirements of Dr. Geo. A. Wyeth's technique of Endothermy.

MISCELLANEOUS

A machine built for the manufacture of Handy Fold Gauze, built by Bauer & Black, will be exhibited by them in space No. 12-A. This machine cuts and folds the gauze, places it in the parchmine envelope, seals the envelope, stacks and counts the output and is then ready for the sterilizer; all of which is done in a few seconds. A special display of several surgical products will be included in the exhibit.

Cilkloid surgical dressing will be exhibited in space No. 162 by the Cilkloid Company. While the impervious form will be shown for occlusive and protective dressings, special attention will be given to the perforated form for direct dressings that will not adhere to the wound. This form is for dressing burns and ulcers.

The Continental Scale Works will display in Booth No. 80 some representative items of their line: Stork Scale, Physicians Scale, School Scale, Health-o-meter, Nurses Light-weight Portable Scale and the Clinic Scale.

The first public showing to physicians of the new Four Bank Standard Keyboard Corona typewriter will be made by the Corona Typewriter Company in their Booths No. 17-A and 20-A. This concern will also show the Medical XC Corona, the model with 90 characters, or six more than found on the ordinary type writer, including all medical symbols.

A large painting of Cragmor and Pikes Peak with a model of the building will be part of the Cragmor Sanatorium exhibit in space No. 5.

The Euscope, an instrument for projecting a microscopic field upon a ground glass screen where a group may study the reactions which occur on the slide, will be featured at the Kolynos Booths No. 150 and 151 to demonstrate the action of Kolynos Dental Cream.

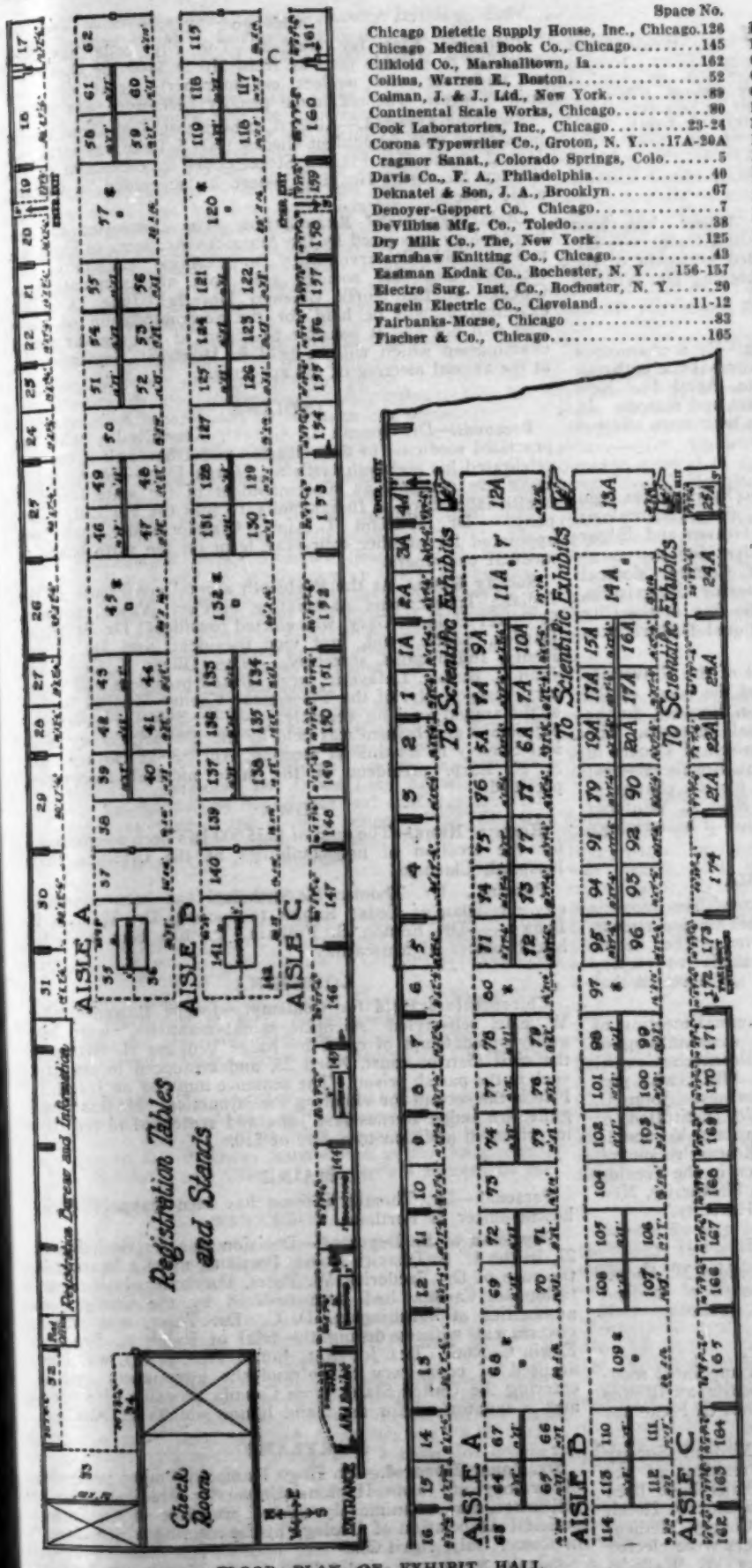
Something new in the line of rubber gloves will be shown by the Massillon Rubber Company in their exhibit in space No. 22. These graduated reinforced rubber gloves have tapered fingers and rolled, snug fitting wrist. A sample pair will be given to all doctors for experimental purposes. Examination cots and drainage tubing are to be included in this display.

The Medical Protective Company will occupy space No. 159 and explain the service which this company renders to the profession. Two of the company's experienced men will be in attendance for imparting information on the subject.

The display of the National Dairy Council in space No. 171 will show its program of health teaching as carried on in the schools and with parent-teacher groups throughout the country. The special feature will be material, stressing the importance of nutrition in order to maintain health and practical suggestions to supplement public health work.

Complete List of Exhibitors

	Space No.
Abbott Laboratories, The, Chicago	32-33-34
Acme-Inter. X-Ray Co., Chicago	9A, 10A, 11A
Allison Co., W. D., Indianapolis	106-107
Aloe Co., A. S., St. Louis	153
Ambulatory Pneu. Splint Mfg. Co., Chicago	58
American Ass'n Milk Comm., Chicago	75-76
Amer. Inst. of Med., New York	167
Amer. Kreuger & Toll Corp., New York	3
American Optical Co., Southbridge, Mass.	132
Appleton & Co., D., New York	26
Arlington Chem. Co., Yonkers, N.Y.	14A
Armour & Co., Chicago	21
Astier Laboratories, P., New York	148
Bard, Inc., C. R., New York	158
Bard-Parker Co., Inc., New York	119
Basile's Prof. Supply House, Chicago	161
Bauer & Black, Chicago	12A
Baum Co., Inc., W. A., New York	133
Bausch & Lomb Opt. Co., Rochester, N. Y.	160
Becton, Dickinson Co., Rutherford, N. J.	18
Berger Brothers Co., New Haven, Conn.	134
Bernt-Forster Dixfield Co., New York	90
Betz Co., F. S., Hammond, Ind.	125-6-7-8
Blakiston's Son & Co., P., Philadelphia	142
Borcherdt Malt Extract Co., Chicago	62
Brady & Co., Geo. W., Chicago	22A
Buck X-O-Graph Co., St. Louis	93
Burdick Cabinet Co., Milton, Wis.	73
Buzzell-Flanders Co., Boston	10
Cambridge & Paul, Ossining, N. Y.	91
Cameron's Surg. Spec. Co., Chicago	3A and 154
Canada Dry Ginger Ale, New York	72
Castle Co., Wilmot, Rochester, N. Y.	51
Central Scientific Co., Chicago	92
Cheplin Biological Labs., Inc., Syracuse	87



FLOOR PLAN OF EXHIBIT HALL

Due to limitations of the page, it is necessary to show this plan in two sections. However, the hall is one continuous building. The lower edge of right-hand section joins on to top of left section, aisles A, B and C running the entire length of the hall.

	Space No.
Chicago Dietetic Supply House, Inc., Chicago	126
Chicago Medical Book Co., Chicago	145
Cilkloid Co., Marshalltown, Ia	162
Collins, Warren E., Boston	52
Colman, J. & J., Ltd., New York	89
Continental Scale Works, Chicago	80
Cook Laboratories, Inc., Chicago	23-24
Corona Typewriter Co., Groton, N. Y.	17A-20A
Cragmor Sanat., Colorado Springs, Colo	5
Davis Co., F. A., Philadelphia	40
Deknatel & Son, J. A., Brooklyn	67
Denoyer-Geppert Co., Chicago	7
DeVilbiss Mfg. Co., Toledo	38
Dry Milk Co., The, New York	125
Earnshaw Knitting Co., Chicago	49
Eastman Kodak Co., Rochester, N. Y.	156-157
Electro Surg. Inst. Co., Rochester, N. Y.	20
Engeln Electric Co., Cleveland	11-12
Fairbanks-Morse, Chicago	83
Fischer & Co., Chicago	165
Foregger Co., Inc., New York	2A
French Screen Co., Detroit	105
General X-Ray Co., Boston	117
General Chemical Co., New York	48
General Optical Co., Mt. Vernon, N. Y.	174
Hanovia C. and M. Co., Newark, N. J.	53-4-5-6
Harold Surgical Corp., New York	94-95
Heidbrink Co., Minneapolis	8
High Tens. T. & E. Co., Union Hill, N. J.	21A
Hoeber, Inc., Paul B., New York	143
Hoffman-LaRoche Chem. Wks., New York	129
Horlick's Malted Milk Co., Racine, Wis.	31
Hynson, Westcott & Dunning, Baltimore	57
Illinois Surg. Appl. Co., Chicago	101
Jaeckh Mfg. Co., Cincinnati	61
Johnson & Co., Mead, Evansville, Ind.	46-49
Johnson Ventilite Co., Chicago	66
Kellogg Co., Battle Creek, Mich.	168
Kelly-Koett Mfg. Co., Covington, Ky.	13
Kloman Inst. Co., Washington, D. C.	104
Kolynos Co., The, New Haven	150-151
Laboratory Products Co., Cleveland	111-112
Lasker Co., Edward, Chicago	E ½ 173
Lea & Febiger, Philadelphia	144
Lehn & Fink, Inc., New York	97
Leitz, Inc., New York	63
Levy, David B., New York	19
Lewis Mfg. Co., Walpole, Mass.	99
Liebel-Flarsheim Co., Cincinnati	70-71
Lilly & Co., Eli, Indianapolis	102-103
Linen Underwear Co., Greenwich, N. Y.	96
Lippincott Co., J. B., Philadelphia	152
Little Co., A. E., Lynn, Mass.	13A
Login Brothers, Chicago	98
Macmillan Co., The, New York	78
Maltbie Chemical Co., Newark, N. J.	42
Maltine Co., The, Brooklyn	47
Mandel Brothers, Chicago	15A
Marbel Blood Calculator Co., Chicago	172
Massillon Rubber Co., Massillon, O.	22
Matthews & Co., L. S., St. Louis	16
McIntosh Electrical Corp., Chicago	14-15
Medical Protective Co., Ft. Wayne, Ind	159
Mellin's Food Co., Boston	147
Merrell-Soule Sales, Syracuse	139-140
Metz Laboratories, New York	149
Meyer Co., Wm., Chicago	115-116
Meyrowitz Surg. Inst. Co., New York	25
Middlewest Laboratories Co., Chicago	28
Mine Safety Appliance Co., Pittsburgh	19A
Monnier, Inc., Ernest, Boston	6
Mosby Co., The C. V., St. Louis	141
Movie Supply Co., Chicago	C-W ½ 169
Mueller & Co., V., Chicago	29-30
National Aniline & Chem. Co., New York	155
National Dairy Council, Chicago	171
National Liter Co., Inc., Chicago	W ½ 173
National X-Ray Screen Co., Chicago	163
Nelson & Sons, Thomas, New York	110-113
Nystrom & Co., A. J., Chicago	64
Oxford University Press, New York	65
Pelton & Crane Co., Detroit	69
Patch Co., E. L., Stoneham, Mass.	100
Patterson Screen Co., Towanda, Pa	164
Pfau's American Instrument Co., New York	9
Physicians Lab. Supply Co., Chicago	88
Postum Cereal Co., Battle Creek, Mich.	68
Prior Co., W. F., Hagerstown, Md.	59-60
Radium Chemical Co., Pittsburgh	87
Radium Emanation Corp., New York	82
Reaves Instr. Shop, Greensboro, N. C.	2
Safety Anesthesia Appar. Concern, Chicago	118
Sanborn Company, Boston	4A and 146
Sanit. & H. Eq. Co., Battle Creek	5A-6A-7A-8A
Saunders Co., W. B., Philadelphia	35-36
Scanlon-Morris Co., Madison, Wis.	4
Searle, G. D., & Co., Chicago	1
Siebrandt Mfg. Co., J. R., Kansas City, Mo.	114
Sklar Mfg. Co., J., Brooklyn	W 8' 109
Smith, Inc., Upsher, Minneapolis	17
Sorensen Co., C. M., Long Island City	74-77
Spencer Lens Co., Buffalo	128
Squibb & Sons, E. R., New York	45
Standard X-Ray Co., Chicago	23A-24A-25A
Stover & Boan Co., Lowell, Mass.	79
Taylor Inst. Cos., Rochester, N. Y.	41-44
Toledo Technical Appl. Co., Toledo	127
Trail Blazer Corp., New York	85
United States Radium Corp., New York	170
Victor X-Ray Corp., Chicago	120-1-2-3-4
Wappler Elec. Co., Long Island City	130-131
Weinsfeld Bros., New York	W ½ 1A
Weinsfeld Mfg. Co., Buffalo	E ½ 169
Welch Grape Juice Co., Westfield, N. Y.	166
Western Electric Co., New York	81-84
Wilson Laboratories, The, Chicago	27
Wood & Co., Wm., New York	39
Zeiss, Carl, Jena	50
Zemmer Co., Pittsburgh	108

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Personal.—Dr. Robert B. Williams, Athens, has been appointed full-time health officer of Marshall County.——Dr. Byron S. Bruce, Opelika, has been elected president of the Alabama State Hospital Association, succeeding Dr. William Gewin, Birmingham.

CALIFORNIA

Fund to Fight Foot and Mouth Disease.—By a unanimous vote, the house appropriated $1,500,000 to combat the outbreak of hoof and mouth disease in California, April 19. New cases have been reported even from quarantined regions. In some places from 50 to 100 per cent. of the herd were affected in two or three days.

COLORADO

Personal.—Dr. Gerald B. Webb, Colorado Springs, has been appointed a corresponding member of the Tuberculosis Society of Scotland.——Drs. Herman C. Graves and Edgar C. Webb, Cannon City, were elected president and secretary-treasurer, respectively, of the Fremont County Medical Society at the annual meeting.——Professor Finkelstein, Berlin, Germany, addressed the Medical Society of the City and County of Denver, May 6, on "Nutritional Disturbances in Children."

Laboratory Changes Name.—The regents of the University of Colorado, in Boulder, April 20, changed the name of the Denison Laboratory for Medical Research, Boulder, to the Henry S. Denison Laboratory for Biological Research. The laboratory is the gift of Mrs. Henry S. Denison of Denver in memory of her son and husband. The removal of the medical school to Denver, next fall, is responsible for the change in name and purpose of the laboratory. Dr. Ross C. Whitman will remain in charge, but he will be professor of bacteriology instead of professor of pathology.

DISTRICT OF COLUMBIA

Smallpox in Washington.—An epidemic of smallpox is present in Washington, according to the health department. More than 100 cases have been reported. The health department has requested of Congress funds to employ additional physicians to stop the epidemic. It is stated that the disease is in a mild form.

National Academy of Sciences.—At the annual meeting of the academy in Washington, April 28, the new building of the National Academy and the National Research Council was dedicated. Prof. Albert A. Michelson, Ph.D., who presided, and President Coolidge gave addresses. John C. Merriam, Sc.D., president of the Carnegie Institution of Washington, spoke for the National Academy and Vernon L. Kellogg, LL.D., secretary of the National Research Council, spoke for the council. A reception was given in the evening and Thomas H. Morgan, Ph.D., of Columbia University, New York, spoke on "The Physiologic Basis of Heredity."

FLORIDA

Personal.—The governor has appointed Leonidas M. Anderson, Lake City, a member of the state board of medical examiners, to succeed the late Dr. James M. Jackson.

ILLINOIS

Personal.—Dr. Charles E. Chapin has been appointed medical director and lecturer on clinical diagnosis at Illinois Wesleyan University, Bloomington.——Dr. Emil O. Ficke has been appointed city physician of Rock Island.

Society News.—The Champaign County Medical Society will entertain Dr. Ray Lyman Wilbur, President of the American Medical Association, May 27. Plans have been made to provide for 250 guests at the Urbana-Lincoln Hotel. ——At the annual meeting of the Mercy County Medical Society in Aledo, April 15, the following officers were elected for the ensuing year: president, Dr. James W. Wallace, Aledo; vice president, Dr. F. J. Kotalik, Sherrard, and secretary-treasurer, Dr. Victor A. McClanahan, Viola.

Chicago

Increased Fine for Neglect.—The city code has been amended to provide fines of from $10 to $100 for physicians or midwives who neglect or improperly treat new-born infants' eyes. The maximum penalty heretofore was $25.

Swindler Arrested.—Alleged to have swindled about twelve physicians with fraudulent checks, Carl S. Lake was arraigned May 2 in the Des Plaines Street court on complaint of the Wesley Memorial Hospital, where he succeeded in cashing a $100 check.

Otolaryngologists' Examination.—The committee in otolaryngology appointed by the American Academy of Ophthalmology and Otolaryngology to examine candidates for entrance into this society, will hold an examination in Chicago at the North Chicago Hospital, June 13. This examination will be held for the accommodation of those who will not find it possible to report at the regular stated examination which will be held in Montreal, September 15, at the annual meeting of the academy.

INDIANA

Personal.—Dr. Joseph L. Gilbert, Kendallville, who has practiced medicine in that city for more than half a century, celebrated his eightieth birthday, March 16.——Dr. Alfred G. Long has resigned as superintendent of the state board of health laboratory at Indianapolis, to join the Eli Lilly Company.——Dr. William T. Gott, Crawfordsville, has been appointed for another four-year term on the state board of medical examiners.

Society News.—At the thirteenth annual conference of the Indiana Tuberculosis Association in Fort Wayne, recently, C. Oliver Holmes, Gary, was elected president; Dr. St. Claire Darden, South Bend, first vice president, and Dr. Alfred Henry, Indianapolis, secretary.——Drs. Oliver E. Griest and John C. Burkle, Lafayette, were elected president and secretary, respectively, of the Tippecanoe County Medical Society at the annual meeting, recently.——A get-together meeting of physicians and laymen was held by the Elkhart County Medical Society at its annual meeting, April 3, at Goshen. Dr. S. E. Earp, president of the state medical association, presided.

IOWA

Hospital News.—The sum of $125,000 has been appropriated for the erection of new buildings at the Clarinda State Hospital, Clarinda.

Personal.—Dr. Thomas F. Suchomel has been appointed city physician of Cedar Rapids to succeed Dr. William E. Brown.——Dr. Edmon B. Fulliam, Jr., has been reelected health officer of Muscatine.

LOUISIANA

Chiropractors Held for Contempt.—Joseph B. and Walter W. Fife, self-styled "scientific spinal masseurs," were held guilty of contempt of court by Judge William H. Byrnes in the civil district court, April 23, and sentenced to ten days each in the parish prison. The sentence imposed on Joseph B. Fife is the second for violating the injunction. He was found guilty by Judge Byrnes last June and sentenced to ten days in prison in addition to a fine of $50.

MAINE

Personal.—Dr. Thomas Tetreau has been reappointed city health officer of Portland.

Physician to Be Deported.—Decision was reserved, March 27, in the U. S. District Court, Portland, after a hearing in the case of Dr. Frederick W. Tozer, Portland, whose deportation to Canada had been ordered by the immigration authorities at Washington, D. C. Dr. Tozer, who was a government witness during the trial of Ralph A. Fry and Erwin C. Ruth (THE JOURNAL, Jan. 6, 1923, p. 41), was later accused of conspiracy to defraud the government and of entering the United States from Canada illegally. He operates a sanatorium for drug and liquor addicts at Portland.

MARYLAND

Dr. Young Honored.—Dr. Hugh Hampton Young, professor of urology at Johns Hopkins University Medical School, Baltimore, was unanimously elected president of the International Association of Urology at the meeting which closed in Rome, Italy, April 26.

Society News.—A special joint meeting of the Baltimore City Medical Society, the Maryland Cancer Committee and the Maryland State Dental Society was held, May 9, at

Osler Hall, Medical and Chirurgical Faculty Building, Baltimore. Senator Royal S. Copeland of New York addressed the societies on "Educational Effort in Preventive Medicine and in Cancer."

Registration Fee Increased.—The state board of medical examiners has announced that the registration fees for those who enter the state by reciprocity will in future be $50. Also, each applicant for examination who has received his medical education out of the United States, in addition to giving evidence of satisfactory preliminary and medical training, shall have taken out his first naturalization papers. All examinations must be written in English.

Personal.—Dr. Henry M. Hurd, psychiatrist and physician, and first superintendent of the Johns Hopkins Hospital, celebrated his eighty-first birthday, May 3, at home, receiving intimate friends.——Dr. Henry J. Berkley, Baltimore, and Dr. George H. Hocking, Govans, have been reappointed by Governor Ritchie to the board of mental hygiene of Maryland, to serve an additional six year term.——Dr. Frederick H. Baetjer, professor of roentgenology, Johns Hopkins University Medical School, Baltimore, recently submitted to his fiftieth operation necessitated by roentgen-ray burns.

MASSACHUSETTS

Chiropractors Fined.—William E. MacDougal and Joseph C. Jasper, chiropractors of Boston, were found guilty of practicing medicine without a license, recently, and fined $300 each and sentenced to one month in jail.

Noted Psychologist Dies.—Granville Stanley Hall, Ph.D., president and professor of psychology at Clark University, Worcester, died at his home, April 24, aged 78, following a long illness. Professor Hall, who was formerly professor of psychology at Johns Hopkins University, Baltimore, was founder and editor of the *American Journal of Psychology*, and the author of "Adolescence," "Senescence" and other volumes on philosophy and psychology.

Harvard University News.—Dr. Leroy M. S. Miner, professor of clinical oral surgery, has been appointed dean of the dental school to succeed Prof. Eugene H. Smith, D.M.D., who has been dean since 1895. He will become professor of clinical dentistry emeritus. Dr. David Linn Edsall is to be dean of the faculties of both medicine and dentistry, as well as continuing as dean of the medical school. Prof. Charles H. Haskins, Ph.D., will resign as dean of the Harvard Graduate School of Arts and Sciences.

MICHIGAN

Personal.—Dr. Roy D. McClure, superintendent of the Henry Ford Hospital, Detroit, has resigned from the Detroit Academy of Surgeons.——Dr. Joseph F. Crofton has resigned as city health officer of St. Joseph.

Chiropractors Found Guilty.—Elmer Green and Frank Filbey, Ionia chiropractors, were found guilty in the circuit court recently for practicing medicine without a license. This is Green's second offense. He was sentenced to six months in jail and fined $200.

Hospital News.—The sum of $600,000 has been appropriated for the erection of an addition to the Detroit Receiving Hospital, of which $300,000 will be used for a nurses' home.—— Fire destroyed the Pinckney Sanatorium at Pinckney, April 11. Drs. Hollis F. and Claude L. Sigler are owners of the institution.

MINNESOTA

Personal.—Dr. Charles H. Mayo has been reappointed volunteer health officer of Rochester.——Dr. Mabel S. Ulrich, Minneapolis, has resigned as chairman of the social hygiene committee of the League of Women Voters.——Dr. Wilson A. Allen, Rochester, observed his ninetieth birthday in March by "attending to business." He has been in practice sixty-four years.

Orthopedic Clinic.—On March 25, at the invitation of the Milbank District Medical Society, Dr. Emil S. Geist, Minneapolis, assisted by Dr. Clara E. Hayes, director of the state division of child hygiene, and Miss Walker, R.N., state supervisor of public health nursing, held a clinic for crippled children at Milbank, S. D. Twenty cases were examined and recommendations for treatment were made. Three of the cases were such that the state board of health, through the division of child hygiene, will give financial aid for their surgical treatment. This is a part of the program recently instituted by the South Dakota State Board of Health through which surgical treatment and hospital care are being provided for indigent crippled children.

MISSOURI

Personal.—Dr. Curtis H. Lohr, St. Louis, has been appointed superintendent of the Municipal Isolation Hospital, succeeding the late Dr. Francis E. Cullen.——Dr. James M. Russell has been elected mayor of Monett.——Dr. Leo Loeb, director of the research laboratory at the Washington University School of Medicine, St. Louis, has been appointed Edward Mallinckrodt professor of pathology at the university.

Medical Credit Bureau.—The medical credit bureau of St. Louis, recently organized by St. Louis physicians as an agency for collecting medical accounts and to loan money to patients to pay their bills, was granted a permit by the state finance commission to sell a $50,000 issue of stock. The bureau was incorporated last November with an authorized capital stock of $110,000; its stockholders include more than 300 physicians, dentists and druggists of St. Louis.

NEW HAMPSHIRE

Personal.—Dr. J. Leavitt Cain, who was severely injured a few weeks ago when his car was struck by a train, has been given $2,067 by friends in Newport and vicinity as a token of appreciation of his work in that city for more than forty years.——Dr. Adelbert S. Merrill, for twelve years assistant director general of the roentgen-ray department, Massachusetts General Hospital, Boston, has been elected roentgenologist to the Elliott Hospital, East Manchester.——Dr. Edgar Orrin Crossman, Manchester, professor of mental diseases at the University of Vermont School of Medicine, Burlington, Vt., and manager of District No. 1, U. S. Veterans' Bureau (Maine, New Hampshire, Vermont, Massachusetts and Rhode Island), has been appointed acting medical director to succeed Dr. Lester B. Rogers, with headquarters at Washington, D. C. Col. Elon F. Tandy will succeed Dr. Crossman.

NEW JERSEY

Chiropractor's Certificates Refused.—The state board of education has announced that teachers' certificates for absence on account of illness issued by chiropractors and osteopaths will not be honored by the board. This resolution was adopted at a meeting of the board in Jersey City, April 16.

Illegal Practitioners Fined.—The state board of medical examiners announces that John H. Conover, Union, was fined $200 on a charge of practicing medicine without a license, last December, and on being convicted again recently, was sentenced to fifty days in jail.——Jacob Silverman, chiropractor, Jersey City, was convicted on a charge of practicing medicine without a license, April 29, and fined $200.——Sophie Terpai, Manville, Mary Grande, Manville, Gelsonina Ontea and Constance Chrzanowski, Linden, were recently convicted and fined for practicing midwifery without a license, according to reports.

NEW YORK

Society News.—At the nineteenth annual meeting of the St. Lawrence County Medical Society at the Hotel Majestic, April 28, Dr. David E. Hoag was elected president; Dr. Charles Francis McCarthy, Brooklyn, vice president, and Dr. W. W. Brash, D.D.S., New York, secretary. Dr. Lee J. Eastmann presided.——The Eastern Medical Society gave an entertainment and dance at the Waldorf Astoria Hotel, May 10, for the purpose of increasing its loan and relief fund.

New York City

Harvey Society Lecture.—Dr. Ludwig Aschoff, professor of pathology, University of Freiburg, Germany, will deliver the eighth Harvey Society Lecture, May 17, on "Renal Secretion and Renal Disease."

Morton in Hall of Fame.—A bust of Dr. William T. G. Morton, discoverer of general anesthesia, will be unveiled, May 13, in the Hall of Fame of New York University by Dr. W. W. Keen of Philadelphia.

Clean-Up Week.—A total of 916,400 circulars giving instructions as to the disposal of waste and refuse are being distributed to the residents of the several boroughs preparatory to "clean-up week," May 5-10, set apart by the New York Department of Health.

Railroad Company Recommends Annual Physical Examination.—The Pennsylvania Railroad has issued a general notice to its 211,000 employees urging them to undergo a complete physical examination at the company's expense once a year. A corps of physicians under the direction of Dr. Eden B. Hunt, superintendent of the voluntary relief department, will be available for this purpose. This examination

would be entirely apart from that required of certain train employees to test their sight and hearing.

Academy of Medicine Meeting.—At a meeting of the New York Academy of Medicine, May 1, resolutions were passed empowering the trustees to sell the site for the proposed new academy building and to seek another site. Dr. Arthur B. Duel was elected a trustee of the academy to fill the vacancy made by the death of Dr. L. Emmett Holt. At the same session an oil portrait of Dr. Walter B. James, former president of the academy, was presented by Dr. Charles L. Dana, and a portrait and bust of the late Dr. Arpad G. Gerster was presented by Dr. George E. Brewer. At the scientific session, Dr. James L. Gamble, Boston, read a paper on "Alterations in the Acid-Base Structure of the Blood Plasma Producing Acidosis."

Memorial Meeting.—A meeting in honor of the memory of Dr. Hermann M. Biggs, former state health commissioner, who died June 28, 1923, was held at the New York Academy of Medicine, April 29. Dr. William H. Welch, Johns Hopkins University, Baltimore, who presided, spoke on the "Life and Works of Dr. Biggs"; the governor, Hon. Alfred E. Smith, spoke on the "Public Services of Dr. Biggs"; Dr. William H. Park, on the "Development of the New York City Health Department"; Dr. Matthias Nicoll, Jr., on the "Development of the New York State Health Department"; Dr. Walter B. James, "The Work of a Physician"; Dr. David G. Stewart, "The Success of a Teacher and Hospital Physician"; Mr. Homer Folks, "The Voluntary Agency in the Public Health Movement"; Mr. Ira A. Place, "A Tribute from Friends and Patients," and Dr. Livingston Farrand on "The Work of a Cornell Alumnus."

NORTH CAROLINA

Herb "Doctor" Convicted.—According to reports, Harry Wolfe, self-styled Indian herb doctor, was convicted in the recorders court at New Bern, April 15, on a charge of practicing medicine without a license. Given the option of leaving the state or spending thirty days in jail, he chose the former.

Stand on Liquor Unchanged.—At the annual convention of the state medical society in Charlotte, the society decided to abide by its stand adopted ten years before that whisky is not essential as medicine and to refuse to urge legislation to have the statutes amended in such manner as to allow the sale of liquor in drug stores on physicians' prescriptions.

OHIO

Physician Missing.—A search has been instituted for Lieut.-Col. Courtney P. Grover, chief surgeon of the Dayton Military Home and commander of the American Legion Post, who has been missing since April 22. Dr. Grover has been in ill health for several months.

The Death of Professor Nichols.—Ernest Fox Nichols of the Nela Research Laboratory, Cleveland, and former president of the Massachusetts Institute of Technology, died suddenly, April 29, while addressing the National Academy of Sciences in Washington, D. C.

OKLAHOMA

Theaters Refuse to Page Physicians.—Tulsa theaters have refused to page physicians attending the shows because some of them have taken advantage of the privilege to secure free advertising for themselves. In future each physician desiring to be paged will secure a number from the secretary of the medical society which will be flashed on the screen when he is wanted. This rule went into effect April 15.

PENNSYLVANIA

Hospital News.—The new addition to the Warne Hospital, Shenandoah, was formally opened, April 15. Dr. Ross V. Patterson, dean of Jefferson Medical College, Philadelphia, was the principal speaker.——A new building will be erected at the Spencer Hospital, Meadville, at a cost of approximately $100,000, to replace the structure recently destroyed by fire. ——It is announced that a million dollar hospital will be erected in York. The sum of $200,000 is available through the will of James A. Dale.

Philadelphia

Memorial Tablet Unveiled.—On May 2, the memorial tablet erected for Dr. C. Lincoln Furbush by the medical board of the Philadelphia General Hospital was unveiled. Eulogies to Dr. Furbush, one time director of public health in Philadelphia, and head of the Philadelphia General Hospital, were given by Dr. Wilmer Krusen, present director of public health; Dr. S. McClintock Hamill, and Dr. Herman B. Allen, president of the medical staff of the Philadelphia General Hospital. The tablet was unveiled by Dr. Joseph C. Doan, medical director of the hospital.

Personal.—Dr. John Hinchman Stokes, head of the section on dermatology at the Mayo Clinic, Rochester, Minn., has been appointed professor of dermatology at the University of Pennsylvania School of Medicine. The chair has been vacant since the retirement of Dr. Milton B. Hartzell, in 1921. ——Dr. Francis G. Blake, professor of medicine, Yale University, addressed the Pathological Society of Philadelphia in the College of Physicians, May 8, on "Observation of the Presence of a Toxic Substance in Scarlet Fever and the Results of Serum Treatment."——Dr. E. E. Montgomery, professor emeritus of gynecology, Jefferson Medical College, who returned from South America in February, sailed for Europe, April 26, on a two years' trip around the world.

SOUTH CAROLINA

Personal.—Dr. Ralph G. Beachley, health officer of Dillon County, has been appointed city health officer of Dillon.——Dr. Reuben G. Hamilton, Winnesboro, health officer of Fairfield County, has accepted a position with the state board of health in malaria control work with headquarters in Columbia.

Health Officers' Meeting.—The fourth annual meeting of the South Carolina Public Health Association was held in Orangeburg, April 15. Dr. Leon Banov, Charleston, was elected president to succeed Dr. Luther A. Riser, Columbia, and Dr. Ralph G. Beachley, Dillon, was elected secretary-treasurer. The next meeting will be held in Charleston.

TENNESSEE

Nashville Physician Sentenced.—It is reported that Dr. Thomas A. Mitchell, Nashville, was sentenced by Judge Jones, April 18, to two years in the Atlanta penitentiary for violation of the Harrison Narcotic Law. Motion for a new trial was overruled.

Hospital News.—The Maury County Hospital (colored), at Columbia, was opened to the public, recently.——A $175,000 nurses' home will be erected at the Erlanger Hospital, Chattanooga, in the near future.——A contract has been awarded for the erection of an infirmary and children's building at Oakville Memorial Sanatorium, Memphis, at a cost of $115,000.

TEXAS

Summer Clinics.—The free summer clinics, open to regular medical practitioners of Texas, will be conducted at the University of Texas Department of Medicine, Galveston, May 26-June 7, inclusive. The clinics will also be given simultaneously in the Baylor University College of Medicine, Dallas, although the schedule of courses will not be the same.

State Medical Meeting.—At the annual meeting of the State Medical Association of Texas in San Antonio, April 29-May 1, the following officers were elected for the ensuing year: president-elect, Dr. Charles M. Rosser, Dallas; vice presidents, Drs. Philip H. Chilton, Comanche, John W. Gidney, West, and Silas J. Alexander, Hearne, and secretary-editor, Dr. Holman Taylor, Fort Worth. The dues were raised from $5 to $15 in order to provide a publicity and educational fund. The next meeting will be held in Austin.

VERMONT

University News.—At the annual meeting and dinner of the Central New England Alumni of the University of Vermont, Burlington, Dr. Lawrie B. Morrison, Boston, was elected president for the ensuing year. Dr. George L. Shattuck, Providence, R. I., and Dr. Sidney M. Bunker, Waverly, Mass., were reelected vice presidents. Dr. Thomas S. Brown, professor of anatomy in the college of medicine, gave an address.

VIRGINIA

State Health Commissioner Sends 100 Hygeia Subscriptions.—Another boost to the circulation of *Hygeia* was given by Dr. E. G. Williams, state health commissioner of the state board of health of Richmond, Va., who sent in 100 subscriptions. These subscriptions go for the most part to health and sanitary officers and public health nurses.

WISCONSIN

State Medical Society Sends 200 Hygeia Subscriptions.—Mr. J. G. Crownhart, secretary of the State Medical Society of Wisconsin, has been especially active in promoting the circulation of *Hygeia*. The Wisconsin State Medical Society recently sent in 200 subscriptions to *Hygeia* at one time.

CANADA

Public Health News.—Of the thirty-nine cases of smallpox reported during the recent epidemic at Windsor, Ont., thirty-two victims who had not been vaccinated or not successfully vaccinated died, according to the health officer for the district. The death rate among such persons was 82 per cent.

Personals.—Dr. Frederick G. Banting of Toronto was recently awarded the John Scott Medal by the City of Philadelphia, Pa., for his work in the discovery of insulin. With the medal was also a check for $1,000 and a diploma certifying the award.——Dr. W. A. Clemens of the Royal Canadian Institute, Toronto, Ont., will leave shortly for Nanaimo, B. C., to take the post of director of the Biologic Board of Canada.——Dr. W. E. Gallie, surgeon-in-chief of the Hospital for Sick Children, Toronto, Ont., recently addressed the Royal College of Surgeons, London, England, being the first Canadian to have that honor.

GENERAL

Medical School Recognized.—According to an official report from the New York Board of Regents, the Loyola University School of Medicine of Chicago, is now recognized by that board. This is a correction of Table D, appearing in the state board issue of THE JOURNAL, April 26.

National Memorial Association Organized.—The National Memorial Association has been organized in Washington, D. C., at a meeting of representatives of more than twenty veteran and patriotic organizations. The purpose of the institution will be to care for the tuberculous among war veterans and their dependents. The plans of the association call for raising $35,000,000, of which $10,000,000 will be for buildings, and the remainder for endowment. The hospital will be known as the National Memorial War Mothers' Hospital.

American Association for Cancer Research.—At the seventeenth annual meeting of the association in Buffalo, April 17, Erwin F. Smith, S.D., was elected president to succeed William Duane, Ph.D.; Dr. Channirg C. Simmons was elected vice president, and Dr. William H. Woglom, New York, secretary-treasurer. The organ of the association, the *Journal of Cancer Research*, now in its eighth volume, will hereafter be published by the Croker Institute of Columbia University, under the editorial management of Dr. Francis Carter Wood.

Society News.—The American and Canadian section of the International Association of Medical Museums was held in Buffalo, April 17, under the presidency of F. B. Murray, Boston. A report was made on the progress of the Sir William Osler Memorial Volume.——The American Association of Hospital Social Workers will be held in Toronto, June 25-July 2. Among the speakers will be Dr. Richard C. Cabot, professor of social ethics, Harvard University, Boston, and Dr. Frederick Brush, superintendent of the Burke Foundation, White Plains, N. Y.——The fourth annual convention of the Kansas Mental Hygiene Society was held in Topeka, May 1, under the presidency of Dr. Karl A. Menninger, Topeka, who spoke on "The Health of the Mind."

Women in Medicine.—A women's national medical association has been organized in Germany with Frau Dr. Heusler as chairman.——Dr. Mary W. Griscom, Philadelphia, has returned to this country following nine months' relief work with the American Friends Service Committee in Austria.——A reception was recently given in Baltimore in honor of Dr. Esther C. P. Lovejoy, chairman of the American Women's Hospitals and president of the Medical Women's International Association.——Dr. Safieh Ali is the first Turkish woman to practice medicine in Constantinople.——Miss Aghavni Shaghoian, a native of Armenia, is now in her senior year at the University of California Medical School.——Dr. Helen F. Gibson, New York City, has gone to India where she will practice as a medical missionary.——Dr. Vera Scantlebury, chief medical officer of the Victorian Baby Health Center, Australia, is investigating health centers in New York City.

FOREIGN

Personal.—Dr. Nils H. Heitman, chief tuberculosis officer of the Norwegian government, and Dr. Germund Wirgin, professor of hygiene, University of Upsala, Sweden, recently arrived in the United States, at the invitation of the Rockefeller Foundation, to study public health work in various cities.——Albert Schweitzer, M.D., a doctor also of music and of theology, Strasbourg, has returned to Africa to take up again his medical missionary work.——Dr. H. M. Mallaby-Deeley has offered to duplicate all contributions received for the Westminster Hospital, London, up to a total of $75,000.——Prof. C. Eijkman, professor of hygiene and microbiology, University of Utrecht, gave a lecture on "The Influence of Tropical Climate on Man," at the University of London, May 2.——Dr. H. D. Gillies, surgeon to the plastic department, Prince of Wales' Hospital, London, who was recently called to Denmark to operate on officers and men of the crusier *Geysir*, who were injured by an explosion, has been appointed a Commander of the Order of the Dannebrog.——Dr. Rudolf Kraus, who recently returned to Vienna after several years in charge of the state serum institute in Argentina and later in Brazil, has been appointed to the chair of pathology at the University of Vienna.——A committee is collecting funds to publish the monographs of Prof. E. Piñerúa, who retires from the chair of chemistry at the University of Madrid this month, having reached the age limit. A donation of 8 pesetas entitles one to a copy of the volume.——Dr. Myra C. Ferrari is the president of the Italian Association of Medical Women, which holds its annual meeting at Rome in May.——Dr. F. Vitali is to preside at the sixth Congress on Occupational Medicine, which convenes at Venice, June 1-4. Devoto, director of the Occupational Clinic at Milan, will open the discussions.——Professor Pauchet of Paris recently gave an interchange lecture at Madrid on "Surgery of the Digestive Apparatus."——Dr. L. Mayer, 72 rue de la Loi, Brussels, is in charge of the fund being collected for the dependents of Dr. E. Mahaux, who was shot by an insane patient in 1922 under circumstances like those responsible for the deaths of Pozzi and of Guinard at Paris.

CORRECTION

National Committee for Mental Hygiene.—In THE JOURNAL for March 22 appeared a statement that a field consultation service had been developed by the Division on the Prevention of Delinquency of the National Health Council. Credit for this development should have been given to the National Committee for Mental Hygiene, 370 Seventh Avenue, New York City, to which address those desiring further information may write.

Government Services

Hospitals Authorized

Pursuant to instructions of the Secretary of War, the organization of Evacuation Hospital No. 31 (Emergency Hospital Unit, Washington, D. C.), organized reserves, has been authorized.

Pursuant to instructions of the Secretary of War, the organization of Surgical Hospital No. 37 (Grace Hospital Unit, New Haven, Conn.), organized reserves, has been authorized.

Discrimination in Bonus Bill Against Public Health Officers Removed

The bonus bill for ex-service men as finally agreed on by the conference committee of the Senate and House provides that Public Health Service officers who served in the army and navy during the war will receive the bonus insurance privileges of the bill. The Senate had passed the measure in a form which excluded public health officers from its benefits. Acting Surg.-Gen. M. J. White informed the conference committee that Public Health Service officers who served in the war ought to be placed on the same basis as all other officers. He stated that exclusion from this legislation would not only discriminate against this group of ex-service men, but would tend to impair the morale of the entire service, if such officers had to feel that they were eliminated merely because they were in the Public Health Service.

The members of the committee recognized the fairness of Dr. White's contention, and struck out the Senate provision. The result is that public health officers who served in the army, navy and coast guard will be recipients of the same benefits as all other officers in the government service who were in the war.

Foreign Letters

LONDON

(From Our Regular Correspondent)

April 14, 1924.

A Commission on Lunacy Administration

In previous letters, the public concern with regard to the administration of the lunacy laws has been shown, particularly by the recent case in which unprecedented damages were awarded to a man for wrongful detention as a lunatic. An appeal against this judgment is in progress. The government is about to appoint a commission on lunacy law and administration, which will be presided over by a judge of the high court. A deputation on the subject of lunacy reform has been received by the minister of health. The deputation, in a long list of points, emphasized two: dangerous facilities for certification, and unscrupulous use that might be made of the decision in a lunacy case. It also brought before the minister various reasons for believing that relatives were able to have certified as lunatics people whom they found "inconvenient." Also, ill treatment of patients by attendants, who really controlled their destiny as to discharge or detention, was alleged. While the constitution of the commission was not actually discussed, it was urged that no physician, either male or female, should be included.

International Health Work

Mr. John Wheatley, minister of health, attended a meeting of the Royal Society of Medicine to welcome the foreign health officers now in the country and to hear a lecture by Dr. Rajchman, director of the health section of the League of Nations. Representatives of twenty-eight foreign countries were present, including twenty-five health officers, twelve tuberculosis officers and thirteen school medical officers. Mr. Wheatley said that the government recognized and appreciated the very valuable work that was being done by the League of Nations in connection with public health. Although established only five years ago, the ministry of health coordinated valuable work that had grown up in this country during a long period. One of the most valuable sections of its work, and the one that the officers of the department entered with most enthusiasm, was that connected with maternity and child welfare. The extent to which that branch of social service had grown up within recent years was one of the things of which this nation had most reason to be proud.

Dr. Rajchman, in his lecture, described the health organization of the League of Nations and the scope of its work. At the moment, he said, no dangerous epidemic was threatening the peace of mind of those engaged in the public health services of western Europe, but there was a serious problem presented in a good many European countries by the wide prevalence of malaria, particularly in Russia. Several governments had already applied to the league to assist them in fighting that disease. In Albania, the health organization of the league had already made a preliminary survey. In Greece, a special commissioner would make a survey, and it was hoped to send one shortly to Persia. In addition to the sum the health organization received from the league, the Rockefeller Foundation was making a grant of $120,000 a year for several years. This would enable them to extend the system of interchange of health officers and to create an international *esprit de corps* among those engaged in the public health services of the world. If the system were in operation for five or ten years, he believed that virtually all the holders of public health posts that were of strategic importance in all the civilized countries of the world would be able to get into contact and to become real collaborators in the work of international health organization.

Death Due to Insulin

It is laid down by authorities on the treatment of diabetes that, if the physician administering insulin keeps a lookout for the symptoms of hypoglycemia and promptly treats them by administering sugar, there should be no danger from hypoglycemia. However, the first fatal case in this country has just been recorded. An inquest was held on a clerk, aged 31, who died as the result of the insulin treatment of diabetes in the Liverpool Northern Hospital. He had suffered from diabetes for three years. He had been treated at intervals with insulin, and had improved wonderfully, though the disease was present in a severe form until the end of March. He was then admitted to the hospital in an emaciated state. Insulin was administered daily until unfavorable symptoms appeared. At first the physicians were not alarmed, but the patient eventually succumbed. The necropsy showed that he was in a very unfavorable state and, according to the medical evidence, he would have lived without treatment only about three months. It was also stated that there was always some danger in the administration of insulin. The coroner found that everything possible had been done by the hospital authorities, and that death was due to hypoglycemia.

Prevalence of Epidemic Encephalitis

Though recognized in this country only a few years ago, epidemic (lethargic) encephalitis has become very prevalent. Last week 190 fresh cases were notified, of which seventeen occurred in London. The figure for the preceding week was 157, and, for the week before, 126. The subjoined table gives the figures for this malady since it was first made notifiable in this country.

Cases of Lethargic Encephalitis

Quarter	1919	1920	1921	1922	1923	1924
First	286	264	952	147	451	760
Second	70	224	244	138	289	...
Third	64	161	144	96	139	...
Fourth	121	241	130	92	159	...
Total for year.	541	890	1,470	473	1,038	...

Therapeutic Substances Bill

A bill to provide for the regulation of the manufacture, sale and importation of vaccines, serums and other therapeutic substances has been introduced by the government. The preparations to which the bill applies are (1) serums, toxins, antitoxins and antigens; (2) arsphenamin and analogous substances used for the specific treatment of infective disease; (3) preparations of the specific antidiabetic principle of the pancreas, known as insulin, and (4) preparations of the posterior lobe of the pituitary body intended for use by injection. Other substances, the purity or potency of which cannot be adequately tested by chemical means, may be added from time to time by regulations. The bill forbids any person to manufacture for sale any scheduled substance without a license, but excludes from these restrictions any registered physician who prepares such substances either for his own patients or for those of another physician. Restrictions are imposed also on the importation of these substances. The bill provides for the framing of regulations

and the securing of uniformity of standards to be set up by a committee.

English Compared with American Children

Dr. Milligan, health officer for Reading, gives in his annual report an interesting comparison between Reading children examined during the last three years and American children of similar ages. In every case the advantage rests with American children, and it increases in the older groups. The average height of Reading children of 12 years and 3 months is given as 54¼ inches and the weight as 73 pounds, as against 56¼ inches and 79 pounds for American children. Dr. Milligan thinks that the circumstances that assist growth in children are more favorable in America than in this country.

Wireless Appeal for Blood for Transfusion

Miss Hetty Ethelberta Claremont, M.S., Lond., F.R.C.S., a surgeon of great promise, has died at the age of 31, after a brilliant career, from bronchopneumonia complicating typhoid fever. When her condition became critical the following appeal was made by wireless: "Will any person who has had typhoid during the last six months give some blood to a doctor who is seriously ill?" Within a few minutes six persons communicated by the telephone number given. Unfortunately, she sank before the operation could be performed. This is a new use for wireless in this country. In no other way could such a prompt response have been obtained.

PARIS

(From Our Regular Correspondent)

April 11, 1924.

Birth and Death Rates in France During the Last Hundred Years

Last year, Prof. A. Calmette of the Pasteur Institute pointed out that the mortality from infectious diseases had diminished during the last thirty-five years (THE JOURNAL, July 7, 1923, p. 54). With preventive measures based on Pasteur's discoveries, we save an average of 90,000 lives a year. But if our public health services were properly organized and the mortality rate of France were brought down to that of Switzerland, the Netherlands, Denmark, Sweden and Norway, we could save 180,000 lives every year, and with such saving the population of France would have remained around 40,000,000. However, since 1806—that is, since exact birth and death statistics have been kept—the birth rate has steadily declined. Recently, Calmette sent to the Academy of Medicine curves of the births and deaths during this period. These show that, during the first half of the last century, the number of births per thousand population was higher than the number of deaths. But, about 1855, the numbers begin to be more nearly equal. From 1890 on, the two curves begin to cross, and between 1914 and 1919 the births took a deplorable drop. Calmette estimates that the World War not only cost France 1,500,000 lives, but prevented 1,560,000 births. A sudden upward trend of the birth curve in 1920 awakened hope, in which year the birth rate rose to 21.3 per thousand population in place of 9.5, which it was in 1916. But in 1921 it dropped back to 20.7 and in 1922 to 19.4. In the latter year, there was a deficit of 74,000 births as compared with 1920.

Tuberculosis Mortality in France

At a meeting of the Academy of Medicine, Profs. Fernand Bezançon and Léon Bernard presented a report on the work done in the antituberculosis campaign by the Office public d'hygiène sociale (THE JOURNAL, Oct. 20, 1923, p. 1375). Justly recognizing this work as remarkable, Bezançon and Bernard nevertheless admitted that comparing the situation in France with that in certain other countries is unpleasant, because of our enormous losses. But such a comparison is valuable for the suggestion that it gives of means by which these losses may be partly averted. The mortality from tuberculosis in the United States dropped from 20.1 per 10,000 in 1900 to 14.9 per 10,000 in 1918. In Denmark, between 1890 and 1921, the mortality from tuberculosis was diminished from 22.78 to 7.2—less than one fourth of our tuberculosis mortality in the department of the Seine. How can we explain these results? In the United States, it is generally thought that the decline in tuberculosis mortality (which in places is beginning to make the sanatoriums look deserted) is due to three causes. The tremendous economic prosperity, the refinement of customs and manners, and, especially, the vast improvement in the quality of food, not only exert an astonishing cultural influence but also improve the public health. Secondly, the development of the public health services in the United States has given rise to a form of publicity which Bezançon and Bernard designate as "actually unbelievable." Everywhere—in the public health services, as well as in social hygiene organizations under private management—an immense flood of tracts and other publications let loose on the public is noted. Lectures, motion pictures, bill boards and posters are utilized to instil into the public ideas of hygiene and public health. The third factor is the increase in beds for the tuberculous. The antituberculosis societies have established beds equivalent to the annual number of deaths from tuberculosis in regions in which a special campaign is being waged. This has come to be the accepted standard: as many beds for the tuberculous as there are deaths annually from tuberculosis. Denmark also has introduced this standard, there being 3,202 deaths annually from tuberculosis and 3,389 beds for the tuberculous, 1,382 of which are in sanatoriums, 1,005 in hospitals specializing in pulmonary tuberculosis, fifty-five in convalescent homes for the tuberculous, and 809 beds for tuberculosis other than pulmonary. In our own department of the Seine, there are 11,208 deaths annually from pulmonary tuberculosis, and the public bureau of social hygiene has only 611 beds in sanatoriums at its disposal. If we add the beds in hospitals and sanatoriums of the Assistance publique, we are still far short of the prescribed standard.

Physicians' Right of Privileged Communication

M. Grinda, a member of the chamber of deputies, addressed an inquiry to the minister of public health as to whether a sworn physician of the administration is bound by the right of privileged communication when he is the attending physician to government employees who apply for a medical certificate to be presented to the administration. He received the following reply:

> A physician in the service of the administration was sworn when appointed to the post for which he applied. He thus became bound, with respect to the administration, to tell the latter the whole truth when the expert examination of a subject is entrusted to him. He cannot, therefore, claim exemption from his oath on the ground that he is the attending physician of an employee who applied to him for a certificate to present to the administration. It is lawful for the employee to apply for treatment or for a medical certificate to any physician other than those connected with the administration.

Traveling Scholarships

Owing to the generosity of M. David Weill, the University of Paris will be able to grant this year five new scholarships of 6,000 francs each, for foreign study. These scholarships will be given to medical graduates who are preparing to teach.

The Congress of Public Health at Bordeaux

The Royal Institute of Public Health of London will hold its annual congress at Bordeaux in June. The congress will comprise six sections. Prominent medical authorities of England, such as Humphry Davy Rolleston, John Bland Sutton, Thomas Oliver and Colonel Ronald Ross, will preside. The

lord mayor of London and a large number of lord mayors and mayors of the principal cities of England will be present. A number of excursions from Bordeaux are planned, especially a trip to southwestern France and the Pyrenees.

Visit of Medical Students from Scotland

It has become an annual event for fifty men and women students of the medical department of the University of Edinburgh to visit our obstetric clinics at this season. The medical section of the general association of students took on themselves the duties of hosts to their Scotch confrères, and met them this year on arrival in Paris. Prof. H. Roger, dean of the Faculté de médecine of Paris, gave an address of welcome in the presence of the professors of clinical obstetrics, Brindeau, Couvelaire and Jeannin.

Deaths

The death of Dr. Paul Guillon, former president of the Sociéte de médecine of Paris, the son and grandson of physicians, is announced.

Dr. François Menuet, roentgenologist of the general hospital in Tours and professor in the Ecole de médecine of that city, has died at the age of 44.

Personal

At its recent session, the Academy of Medicine took up the election of a titular member in the surgical section in place of Professor Duplay, deceased. On the first ballot, Dr. Felix Lejars, professor of clinical surgery in the University of Paris, was chosen by sixty-five votes out of seventy-four.

BERLIN

(From Our Regular Correspondent)

April 12, 1924.

Appointment of Professor Dietrich as Ministerial Director

As the successor of Professor Gottstein, Professor Dietrich has been appointed director of the medical department of the Prussian ministry of public welfare. He is its oldest member, having been associated with this ministry since 1900. He had previously been, for years, a public health officer in the provinces. Aside from practical work in the public health service and manifold activities in the interest of the Prussian medical service, he has written a great deal on medical subjects, and collaborated in editing a number of journals on public health. He published the Jahrbuch für das Krankenhauswesen and the Handbuch der preussischen Krankenanstalten, and, with another Prussian health officer, has put out a revised edition of a two volume work on Aerztliche Rechts- und Gesetzeskunde. Dietrich and Kaminer are joint editors of a four volume compendium of balneology. Unfortunately, Dietrich will not be able to utilize his extensive knowledge in this new position long, for, as he is 63 years old, the law will require him to retire from his post in two years—or three, at the most.

The German Institute of Psychiatric Research

Like all German scientific institutes, the Deutsche Forschungsanstalt für Psychiatrie in Munich is affected severely by the depreciation of the mark. In view of the importance of problems being investigated at this institute, such as the causes of mental disease and their cure or prevention, it should receive the generous support of all classes. Geheimrat Kräpelin, founder of the institute, recently gave representatives of the Munich press an opportunity to inspect the new home of the institute (Bavariaring 46), which Dr. James Loeb has turned over to it.

The institute consists of several independent departments. It is the work of the anatomicopathologic department, under the direction of Prof. Dr. W. Spielmeyer, to discover the physical basis of mental diseases—that is, the changes in the central nervous system that are the substratum of mental diseases. For this purpose, anatomic specimens characteristic of the various types of insanity are collected. The institute receives brains from the psychiatric clinics of many German institutions for the insane; it is a clearing house for psychiatric research. At present, the chief field of investigation is the metabolism in the normal and in the diseased brain, and the anatomic study of hereditary and familial mental diseases. An attempt is also being made to establish distinct disease processes in idiocy.

The serologic department, under the direction of Prof. Dr. Plaut, is conducting researches on the blood and the cerebral fluid. Especial attention is being given to syphilitic affections of the nervous system. Animal experimentation is extensively employed to further the recognition and treatment of such affections. In collaboration with the large pharmaceutic houses, which pay a good share of the cost of experimental animals, the effects of new remedies on animals are tested. Of the therapeutic methods already in use, the treatment of paralysis by inoculation with recurrent fever deserves mention. This method, which was introduced by the serologic department, has been employed for five years at the psychiatric clinic and elsewhere. In much the same manner as by inoculation with malaria, it is possible to improve the condition of a certain percentage of paralytics, some becoming able to perform for a time their customary work.

The genealogical department, of which Prof. Dr. Rüdin is the director, is studying the problem of the hereditary transmission of mental diseases. The genealogy of patients is followed back as many generations as possible, in order to discover whether the same or similar mental diseases have occurred previously in the family. From the findings so collected, an endeavor is made, after analogies in zoology and botany, to deduce laws according to which certain hereditary characters are transmitted. Professor Rüdin has collected an enormous mass of material, but the depreciation of the mark has made it next to impossible to carry on the work.

The psychologic department, which is in the new quarters, together with the large library, is under the direction of Professor Kräpelin. Its problem is to discover mental disturbances in varying details. The relation of mental work to all possible external influences (fatigue, ingestion of food, sleep, etc.) are investigated, to discover how and by what means mental performance is furthered or hampered. The department devotes considerable attention to the hygiene of work, and, especially, the distribution of work and periods of rest. What is the proper distribution of work and rest? How can the greatest performance be secured from a given expenditure of energy? Ingenious apparatus—for example, that for testing the soundness of sleep—aid in solving these problems.

On the clinical department devolves the task of arranging the material that Kräpelin has been collecting for more than twenty years, and putting it to scientific use.

The Agreement with the Health Insurance Societies

Further negotiations between Berlin physicians and the representatives of the health insurance societies have led to an agreement, which provides for retaining the principle of free choice of a physician in general, although certain limitations have been agreed on. New panel physicians will be admitted from time to time. Some physicians are not fully satisfied with the agreement, and considerable opposition to the executive committee of the physicians' league has developed. The committee has therefore called a general meeting of the physicians in order that the action of the committee may be generally discussed.

Marriages

WILLIAM ROBERT PARKS, Harlan, Ky., to Miss Katherine Groseclose of Marion, Va., January 25.

WALTER H. FINK, Philadelphia, to Miss Florence Fisch of Minneapolis, in February.

JAMES RUDOLPH JAEGER to Miss Mabel Edna Kohankie, both of Denver, March 29.

GUY L. ARMSTRONG, Taylorville, Ill., to Miss Alice Hicks of Decatur, April 12.

FLOYD B. DAILEY to Miss Cora Crawford, both of Mountain Grove, Mo., recently.

FLORENCE SLAFF to Samuel Mamlet, D.D.S., both of Passaic, N. J., February 15.

CARL R. MITCHELL to Miss Mary Cuneo, both of Chicago, April 23.

Deaths

Hugh Nelson Leavell ✠ Louisville, Ky.; University of Louisville Medical Department, 1894; Hospital College of Medicine, Medical Department Central University of Kentucky, Louisville, 1898; formerly professor of materia medica, therapeutics and pharmacy at the University of Louisville Medical Department; first president of the Jefferson County Medical Society; member of the county board of health; aged 49; died, April 16, of septicemia and pneumonia.

Horace Bonner ✠ Dayton, Ohio; Miami Medical College, Cincinnati, 1879; member of the American Academy of Ophthalmology and Oto-Laryngology; past president of the Ohio State Medical Association; for twenty-five years on the staff of St. Elizabeth's Hospital; aged 73; died, April 15, of cerebral hemorrhage.

Henry Etherington McLennan, Bellevue, Mich.; Detroit College of Medicine and Surgery, 1900; member of the Michigan State Medical Society; served in the M. C., U. S. Army, with the rank of captain, during the World War; aged 49; died suddenly, April 14, of cerebral hemorrhage.

Arthur Ernest Lane, Laramie, Wyo.; University of Nebraska College of Medicine, Omaha, 1905; member of the Wyoming State Medical Society; veteran of the Spanish-American and World wars; aged 52; died, April 13, at Long Beach, Calif.

Wilson A. Foskett, White Bird, Idaho; Rush Medical College, Chicago, 1897; member of the Idaho State Medical Association; aged 54; was drowned, April 14, when the automobile in which he was driving plunged into the river.

Charles P. Brewer, Fort Worth, Texas; Fort Worth School of Medicine, Medical Department of Texas Christian University, 1902; member of the State Medical Association of Texas; aged 67; died, April 12, of pneumonia.

William Miller Roberts ✠ Major, U. S. Army, retired, Baltimore; University of Maryland School of Medicine, Baltimore, 1896; was retired for physical disability, March 21, 1917; aged 51; died, April 15, at Ruxton, Md.

Thomas Jefferson Strait, Lancaster, S. C.; Medical College of the State of South Carolina, Charleston, 1885; formerly member of the state legislature; Civil War veteran; aged 77; died, April 18, of abscess of the lung.

William Martin Snell, Theresa, N. Y.; New York Homeopathic Medical College and Hospital, New York, 1900; member of the Medical Society of the State of New York; aged 49; died, April 14, of pneumonia.

George Walter Amerson, Milo, Okla.; Chattanooga (Tenn.) Medical College, 1905; member of the Oklahoma State Medical Association; Spanish-American War veteran; aged 44; died, April 15, of heart disease.

Archie E. Cearnel, Indian Creek, Texas; University of Alabama School of Medicine, Tuscaloosa, 1874; member of the State Medical Association of Texas; aged 67; died, March 26, of pneumonia.

Martha Smyth Everitt, Philadelphia; Woman's Medical College of Pennsylvania, Philadelphia, 1895; aged 66; died, April 5, at St. Francis Hospital, Evanston, Ill., of uremia and chronic nephritis.

Robert Allen White, Fairfield, Ala.; University College of Medicine, Richmond, Va., 1907; member of the Medical Association of the State of Alabama; aged 41; died, April 15, of pneumonia.

Leon Michael Gillette, Battle Creek, Mich.; University of Michigan Medical School, Ann Arbor, 1887; formerly city health officer and mayor; aged 64; died, April 16, of cerebral hemorrhage.

David Wellington Bunker, Bangor, Maine; Medical Department of the University of the City of New York, 1882; member of the Maine Medical Association; aged 71; died, April 15, of senility.

Maud Conyers Exley ✠ Harrisburg, Pa.; Woman's Medical College of Pennsylvania, Philadelphia, 1910; formerly on the staff of the Harrisburg Hospital; aged 51; died, April 16, of pneumonia.

James Lane ✠ Salt Lake City, Utah; Royal College of Surgeons of Ireland, 1882; Kings Queens College of Physicians, Dublin, Ireland, 1883; aged 66; died, March 18, of pneumonia.

Robert Harry Barnes, Youngstown, Ohio; Jefferson Medical College of Philadelphia, 1870; formerly on the staff of the Mahoning Valley Hospital; aged 78; died, April 14, of carcinoma.

John Joseph Chapman, Lawton, Okla.; Baylor University College of Medicine, Dallas, Texas, 1907; member of the Oklahoma State Medical Society; aged 67; died suddenly, April 2.

John Howard Cheever, Arlington, Mass.; Tufts College Medical School, Boston, 1901; member of the Rhode Island Medical Society; aged 54; died in February, at Oakland, Calif.

Harry Furniss Lambert, Dumont, Iowa; University of Illinois College of Medicine, Chicago, 1915; aged 39; died, March 8, at the Mercy Hospital, Des Moines, of peritonitis.

Uriel S. Boone, St. Louis; St. Louis College of Physicians and Surgeons, 1897; member of the Missouri State Medical Association; died, February 18, of pneumonia.

Seriah Stevens, Boston; Medical School of Maine, Portland, 1882; member of the Massachusetts Medical Society; aged 72; died, April 17, of senility.

Samuel McMillen, Alexandria, Tenn.; Vanderbilt University Medical Department, Nashville, 1890; aged 62; died, April 9, following a long illness.

Henry V. Tutton, Benton Harbor, Mich.; Chicago (Ill.) Medical College, 1882; founder and on the staff of the Mercy Hospital; aged 66; died, May 2.

Henderson Hayward, Los Angeles; Georgetown University School of Medicine, Washington, D. C., 1869; aged 79; died, April 14, of senility.

James H. Thompson, San Francisco; Baltimore (Md.) University School of Medicine, 1897; aged 56; died, April 11, at the City Prison.

Solon K. Houser, Indianapolis; Kentucky School of Medicine, Louisville, 1892; aged 71; died, April 20, at the Robert W. Long Hospital.

George F. Souwers, Philadelphia; Jefferson Medical College of Philadelphia, 1877; aged 67; died suddenly, April 21, of heart disease.

James Nelson Shallenberger, Chicago; Barnes Medical College, Chicago, 1897; aged 67; died, May 1, of injuries received when assaulted.

Arthur F. Comings, Seattle, Wash.; Missouri Medical College, St. Louis, 1881; aged 79; died, April 12, of cerebral hemorrhage.

Maurice M. Scheuer ✠ Des Moines, Iowa; Chicago (Ill.) Medical College, 1887; aged 58; April 5, following a long illness.

Thoralf E. S. C. Scholdager, Great Falls, Mont.; University of Norway, Christiania, 1907; aged 43; died, April 22.

Thomas G. Holmes, Detroit; Bellevue Hospital Medical College, New York, 1869; aged 77; died, April 16, of senility.

William Weaver Hartman ✠ Chicago; Rush Medical College, Chicago, 1892; aged 57; died, May 2, of heart disease.

Charles H. Mills ✠ Toledo, Ohio; Toledo Medical College, 1884; aged 66; died, March 16, of pneumonia and pleurisy.

Homer L. Agler, Columbus, Ohio; Starling Medical College, Columbus, 1875; aged 73; died, April 14, of senility.

George Marion Hendren, Bryantsville, Ky.; Medical College of Ohio, Cincinnati, 1875; aged 78; died, April 14.

Thomas J. Bowles, Muncie, Ind.; Medical College of Ohio, Cincinnati, 1867; aged 87; died, April 19, of senility.

Correspondence

"THE INFLUX OF FOREIGN PHYSICIANS"

To the Editor:—In the editorial, The Journal, April 26, attention is called to the influx of foreign physicians into the United States, and the suggestion is made that measures be taken to restrict the number by requiring high standards for licensure and careful identification of applicants. There can be no question that we should require as high standards for licensure of foreign physicians as for those educated in this country, and we certainly should keep out impostors and criminals. Likewise, your advice that a declaration of intention to become a citizen be required is in accord with the practice in a number of states and is certainly proper.

When it is suggested, quite incidentally, that foreign physicians should not be licensed until they become citizens, a proposition is made that has an entirely different purpose—one that has nothing to do with safeguarding the public from incompetent medical men but one that can have for its object only the total exclusion of all foreign physicians. It is evident that a practicing physician or one prepared for practice cannot come to America and wait five years, doing nothing or nonmedical work while acquiring his citizenship before he can begin to practice his profession.

If these views are accepted without protest, state boards that have made this rule and the nonprotesting people of such states will, in reality, be favoring the exclusion of foreign physicians. Is such a policy in the interest of medicine of the people of this country? If not, why is it advocated? Is it perhaps in the economic interest of physicians? Are we afraid of the competition of these foreigners? Would the addition annually of two or three well educated physicians to a thousand seriously affect the income of those now practicing? I think they would be more likely to drive out a few quacks.

But it is a fundamental principle of the Association that the medical profession should seek the general interests of the people and should not work for the financial interests of its members when they conflict with the general good. Physicians may organize to improve their economic condition and seek to increase their fees or wages and restrict or abolish competition, but such a policy is not based on the principles laid down by the founders of the American Medical Association and which hold good to the present time. We uphold the standards of the profession when we appear before legislators to oppose the licensing of chiropractors and other pretenders to medical knowledge and emphasize the altruism of our motives. We claim that we are working for the good of all to protect the people from incompetents and charlatans.

Is the policy of exclusion of foreign physicians in the interest of the people or of scientific medicine? Would the admission of well trained foreign physicians lower the standards of medicine? When we recall the contributions of Christian Fenger, Abraham Jacobi, Alexis Carrel, William Osler and Samuel Meltzer are we not glad that the chauvinistic rule for the practical exclusion of foreign physicians had not been formulated by autocratic boards of registration when these men came to this country? The exchange of ideas and methods of work are of great importance to progress. We can still learn much from Europe, and it is even better that good internists and surgeons and pediatricians come here to influence many by contact than that a very few go to Europe to profit personally by a few months of observation. We all know the advantages of the European system, by which men are trained for years in large clinics where they become inoculated with a thirst for research and acquire a training in organization that makes them competent to carry on scientific investigation. It is true that we are beginning to train men for such work in a few of our universities; but is there any sense in a rule that would prevent such men as Fuchs, Pirquet or Schick from coming here to practice?

While endorsing fully your statement that the public needs protection against incompetent and undesirable physicians from abroad, and agreeing that foreign physicians should pass as strict an examination as those educated here and also declare their intention to become citizens, I wish to protest against the favorable consideration of the rule already adopted with doubtful authority by a few state boards providing for citizenship before licensure, which means practical exclusion of foreign physicians.

C. S. Bacon, M.D., Chicago.

[Note.—The reader is again referred to the editorial which this letter discusses.—Ed.]

FATAL ANAPHYLAXIS FOLLOWING HEMOPLASTIN

To the Editor:—I desire to put on record the following case in order that similar accidents may be avoided:

Mrs. P., aged 32, quadripara, had a spontaneous delivery of both child and placenta followed by a persistent postpartum hemorrhage. Pituitary extract and ergot failed to stop it; therefore the uterus was packed, with success. On removal of the gauze, eighteen hours later, there was no fresh bleeding. The lochia were very profuse, and on the seventh day, being still bright red and, while not alarming, requiring treatment (ergot and hydrastis having failed), 4 c.c. (or perhaps 0.5 c.c. less) of Hemoplastin (Parke, Davis & Co.) was administered in the left thigh.

Within one and one-half minutes the patient collapsed, clutching at the heart; she exclaimed, "I can't breathe," screaming loudly. The resident physician arrived within four or five minutes. He found her clasping her breast, extremely pale; she said she could not get her breath, and feared she would die. Then she expired. There was no pulse at the wrist, and he thinks that the heart failed first. Epinephrin was administered at once, and again, ten or twelve minutes later, intracardially, with no response. Artificial respiration was continued one hour.

After the death, the husband stated that the patient was a sufferer from asthma and that the attacks were elicited by even the mere approach of a horse. A necropsy was persistently refused.

There is one aspect of the case that requires mention. Two days before death the patient complained of a sudden sharp, sticking pain in the right chest. This awoke in my mind the thought of embolism, and a degree of probability was lent to this suspicion by (1) excessive varicosities of the legs and thighs; (2) the postpartum hemorrhage; (3) the packing of the uterus, and (4) the characteristic symptoms. There was no elevation of temperature or increase of pulse rate during the puerperium.

Under the repeated assurances from the manufacturers that hemoplastin did not cause anaphylactic phenomena, we have been using it in very many cases—in both mothers and babies. There has never been a single instance in which it produced untoward symptoms, and it often, apparently, stopped bleeding. Since this accident, however, we have learned of another case wherein death occurred a few minutes after the administration of hemoplastin to a woman sensitized by the previous injection of horse serum.

J. B. DeLee, M.D., Chicago.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

USE OF CONVALESCENT SERUM IN TUBERCULOSIS

To the Editor:—1. Has any one ever tried to transfer serum from an arrested case of tuberculosis to an active one? 2. What is the explanation for a positive intradermal tuberculin test, and why is it directly opposite in a Schick test; that is to say, why does a negative Schick test mean resistance to diphtheria and a positive intradermal test mean resistance to tuberculosis infection? 3. In transferring convalescent serum, or, rather, serum from convalescent scarlet fever and measles patients to susceptible patients, is there any danger of anaphylaxis? Would there be danger of anaphylaxis in transferring serum from a convalescent tuberculous patient to one with poor resistance? 4. Would hemolysis occur in transferring serum without any blood cells?

H. F. GAMMONS, M.D., Franklin, La.

ANSWER.—1. We are unable to find any references on the treatment of tuberculosis with convalescent serum.

2. The most common explanation supposes a toxic action of split products resulting from the action of specific antibodies on tuberculin. The process seems to be identical or similar with anaphylaxis. The positive tuberculin test does not indicate a resistance. It is a state of allergy (reaction which differs from normal) conditioned by the presence of, or at least a previous contact with, tuberculosis bacilli. Diphtheria *toxin* is used in Schick's test. Being a poison, it develops its action in any one who has not a sufficient amount of antibodies to neutralize it. Experience has demonstrated that persons who have enough of these antibodies to neutralize the doses used are also sufficiently protected against infection with diphtheria bacilli. Comparatively large doses of tuberculin produce practically no reaction in man or animals who were never infected with tuberculosis bacilli. Therefore, it cannot be considered as a toxin. On the other hand, small doses are sufficient to produce toxic effects in infected organisms, which we suppose to be sensitized against this product of tuberculosis bacilli, just as in the case of injection of nontoxic proteins in sensitized animals. The positive Schick test indicates that the diphtheria toxin has free play in the organism; the negative shows that it was neutralized by an antitoxin. The positive tuberculin test probably indicates the presence of some sort of specific antibodies (not antitoxins), and a negative tuberculin test shows that either the subject was not in contact with the bacilli before, or that he lost the antibodies through miliary tuberculosis, measles, etc., or that he is sufficiently immunized against the amount of tuberculin injected (perhaps an antitoxic action against the split products mentioned above).

3. There is little or no danger of anaphylaxis in injections of convalescent serum.

4. If the injection of pure serum were given intravenously, hemolysis might occur if the erythrocytes of the recipient were incompatible with the serum of the donor.

BUTTERMILK AS A FOOD

To the Editor:—I would be obliged if you could give me some information concerning the use of buttermilk as a food and beverage in cases of high arterial tension with or without manifest renal disturbance. There appears to be a general impression in this locality that its use is indicated in this condition rather than that of sweet milk. As the protein content of the two is practically the same, I would think that the same restrictions as to quantity should be placed on both. Is the lactic acid in the buttermilk liable to increase the acidity of the urine? If so, is this a desirable thing, or the reverse in these high tension cases?

A. F. A., M.D.

ANSWER.—The main difference between buttermilk and whole milk is in the fat content, which is practically nothing in buttermilk. This naturally reduces the food value of buttermilk, but except for that there is no difference in using either one in cases of high arterial tension. The lactic acid of buttermilk probably has no influence on the acidity of the urine to a degree sufficient to affect blood pressure in any way.

It might be well to emphasize that, in high arterial tension cases, it is probably more important to restrict the total supply of food and the total supply of fluid than it is to restrict completely the protein intake. It has been definitely shown that in cases of obesity with high blood pressure, loss of weight is followed by drop in blood pressure. It is easy to realize that, with high blood pressure, the heart and kidneys are already worked overtime, and that throwing into the system an excessive amount of fluid simply increases that burden.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARKANSAS: Little Rock, May 13-14. Sec., Dr. J. W. Walker, Fayetteville.

DELAWARE: Wilmington, June 17. Sec., Medical Council, Dr. H. W. Briggs, 1026 Jackson St., Wilmington.

FLORIDA: Ocala, June 16-17. Sec., Dr. W. M. Rowlett, Citizens Bank Building, Tampa.

GEORGIA: Atlanta and Augusta, June 4-6. Sec., Dr. C. T. Nolan, Marietta.

ILLINOIS: Chicago, June 24-27. Supt. of Regis., Mr. V. C. Michels, Springfield.

IOWA: Iowa City, May 29-31. Sec., Dr. Rodney P. Fagen, Capitol Building, Des Moines.

KANSAS: Topeka, June 17. Sec., Dr. A. S. Ross, Sabetha.

KENTUCKY: Louisville, June 9. Sec., Dr. A. T. McCormack, 532 W. Main Street, Louisville.

LOUISIANA: New Orleans, June 12-14. Sec., Dr. Roy B. Harrison, 1507 Hibernia Bank Bldg., New Orleans.

MARYLAND: Baltimore, June 17-20. Sec., Reg. Bd., Dr. Henry M. Fitzhugh, 1211 Cathedral St., Baltimore; Sec., Homeo. Bd., Dr. E. H. Wilsey, Chesapeake City.

MASSACHUSETTS: Boston, May 13-15. Sec., Dr. Charles E. Prior, 144 State House, Boston.

MICHIGAN: Ann Arbor, June 10-12; Detroit, June 16-18. Sec., Dr. B. D. Harison, 707 Stroh Bldg., Detroit.

NEBRASKA: Omaha, June 18-20. Supt., Dr. J. D. Case, Terminal Building, Lincoln.

NEW JERSEY: Trenton, June 17-18. Sec., Dr. Alexander MacAlister, State House, Trenton.

NORTH CAROLINA: Raleigh, June 23. Sec., Dr. Kemp P. B. Bonner, Raleigh.

OHIO: Columbus, June 3-6. Sec., Dr. H. M. Platter, Hartman Hotel Bldg., Columbus.

SOUTH CAROLINA: Columbia, June 24. Sec., Dr. A. Earle Boozer, 505 Saluda Ave., Columbia.

TENNESSEE: Memphis, June 13-14. Sec., Dr. A. B. De Loach, 434 Madison Ave. Bldg., Memphis.

TEXAS: Austin, June 17-19. Sec., Dr. T. J. Crowe, 918-19 Mercantile Bank Building, Dallas.

VERMONT: Burlington, June 25-27. Sec., Dr. W. Scott Nay, Underhill.

VIRGINIA: Richmond, June 17-20. Sec., Dr. J. W. Preston, 720 Anchor Building, Roanoke.

WISCONSIN: Milwaukee, June 24-26. Sec., Dr. J. M. Dodd, 220 E. Second Street, Ashland.

WYOMING: Casper, June 5-11. Sec., Dr. J. D. Shingle, Citizens Bank Bldg., Cheyenne.

Alabama January Examination

Dr. S. W. Welch, chairman, Alabama Board of Medical Examiners, reports the written examination held at Montgomery, Jan. 8-12, 1924. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 8 candidates examined, 7 passed and 1 failed. Three candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Birmingham Medical College		(1915)	81.7
Emory University		(1923, 2)	85.1, 89.5
Tulane University		(1923, 2)	89, 93.2
Barnes Medical College		(1910)	81.7
Vanderbilt University		(1923)	93.6

College	FAILED	Year Grad.	Per Cent.
Chattanooga Medical College		(1909)	35.4

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Tulane University		(1921)	Louisiana
University of Minnesota		(1923)	Minnesota
University of Virginia		(1921)	Virginia

Washington January Examination

Mr. William Melville, secretary, Washington Department of Licenses, reports the oral and written examination held at Olympia, Jan. 8, 1924. The examination covered 14 subjects and included 140 questions. An average of 75 per cent. was required to pass. Nine candidates were examined, all of whom passed. The following colleges were represented:

College	PASSED	Grad. Year	Licensed Number
University of Colorado		(1921)	1
Johns Hopkins University		(1916)	1
Western University Medical School		(1923)	1
McGill University Faculty of Med.		(1909), (1922), (1923, 2)	4
University of Moscow, Russia		(1901)*	1
University of Tomsk, Siberia, Russia		(1911)*	1

* Graduation not verified.

Book Notices

PHYSICAL EXERCISE FOR DAILY USE. By C. Ward Crampton, M.D., Director of Physical Exercise, Battle Creek Sanitarium. Cloth. Price, $3.50. Pp. 303, with illustrations. New York: G. P. Putnam's Sons, 1924.

This is a safe book for the person who wants to develop health through proper use of physical exercise. Dr. Crampton has planned the exercises on the basis of physiologic knowledge. He writes in a spirit that is just short of breathlessness, and his book is dressed up with all those details in the way of mottoes, aphorisms, illustrations and anecdotes that make a book of this kind attractive to the public. The book begins with a recommendation for attaining perfect physical condition. It follows with a series of exercises and a schedule of exercises excellently illustrated. The concluding chapters concern proper prescription for exercises, bathing, weight and overweight, and the use of the periodic examination as a means of controlling knowledge as to physical condition. The publishers have made a most attractive book, and it should have a wide circulation.

DIE GEOPSYSCHISCHEN ERSCHEINUNGEN, WETTER UND KLIMA, BODEN UND LANDSCHAFT IN IHREM EINFLUSS AUF DAS SEELENLEBEN. Dargestellt von Willy Hellpach, Dr. Phil. et Med., Ord. Hon. Prof. A. D. Hochschule in Karlsruhe. Third edition. Cloth. Price, 14 gold marks. Pp. 530, with 12 illustrations. Leipsic: Wilhelm Engelmann, 1923.

More and more scientists and physicians are coming to realize that climate, weather, race and environment have much to do with the life of man, both mental and physical. In the present volume, which is the third edition, the author, with typical German encyclopedic thoroughness, collects all the known facts and many of the known theories involved in such considerations. He discusses not only such simple matters as melancholia, which may be induced by a long spell of bad weather, but also such delicate influences as sudden changes in the weather. He recognizes that not all persons are equally susceptible to these influences, and he calls attention to a special class of geopathic persons whose temperaments are especially influenced by meteorologic phenomena. It is recognized at once that much of what is brought out in this book is based on empiricism, which has, however, many centuries of observation as its foundation. The book will be of especial interest to all of those who contemplate more modern researches into this difficult subject.

THE MEDICAL WORK OF THE NEAR EAST RELIEF. A Review of Its Accomplishments in Asia Minor and the Caucasus during 1919-1920. Edited by George L. Richards, M.D. Paper. New York: Near East Relief, 1923.

When it was decided to send a relief expedition into Turkey after the armistice, it was at once evident that a medical organization was necessary. The original plans provided for fifteen hospital units, with enough additional supplies to provide for emergency hospitals when needed. It was planned to use missionary hospitals that already existed, but they were found to be virtually without equipment and unfit to use in some places until the buildings had been extensively repaired. The director of the medical arrangements in Turkey was Dr. George H. Washburn, who had been a resident in that country and knew the language and customs and needs of the people. While the armistice had been signed when this work was undertaken, the country was under military occupation, and it need not be said that medical relief work was performed under difficulties. This review is the story of the first year's work, told chiefly by physicians who were in charge at the various hospitals. Dr R. A. Lambert, who was at Aleppo, said the only available water supply was an old Roman aqueduct running through the hill 90 feet under the surface, and reached only by a large, well-like shaft carrying a primitive bucket for lifting the water. To supply 7,000 people, many of whom were sick, and to clean them appeared a formidable task, but in a few months there was a well equipped hospital of 125 beds with its own water supply. The medical work at Aleppo comprised a large variety of conditions, including relapsing fever, typhus, phlebotomus fever, Aleppo button or Delhi sore, cholera and bilharziasis.

Medicolegal

Hospital a Public Necessity in Modern Life

(Thompson et al. v. Evangelical Hospital Ass'n (Neb.), 196 N. W. R. 117)

The Supreme Court of Nebraska, in affirming a judgment denying the plaintiffs an injunction against the erection and operation of a general hospital, says that they were property owners residing with their families in the immediate vicinity of the site of the proposed hospital, which was in a closely built-up residential district. But that a hospital in itself is objectionable to those residing in close proximity to the site of a proposed hospital, or that the value of property in the neighborhood may be adversely affected, does not ordinarily constitute sufficient ground to warrant a decree enjoining its erection. In modern life a hospital is a public necessity, and to be of service to the public it must be so situated as to have available for its use electric current, gas mains, and sewers. And, as many of its patrons will be without private conveyances and obliged to depend on the street cars for service to and from the hospital, it is almost imperative that it be located where these conveniences are accessible. It was shown that patients suffering from contagious diseases would not be received into the proposed institution. The threatened injury to the health of the plaintiffs was too remote and conjectural to warrant the issuance of the writ.

Evidence in Case of Death Under Anesthetic

(Biancucci v. Nigro (Mass.), 141 N. E. R. 568)

The Supreme Judicial Court of Massachusetts, in sustaining the plaintiff's exception to the admission of certain evidence in this case, in which there was a verdict for the defendant, says that the action was brought by the plaintiff as an administrator to recover damages for the death of a girl about 10 years old, alleged to have been caused by the defendant's negligence in administering an anesthetic. The girl had received a small wound on her right thumb, and the defendant inserted three stitches, after using chloroform as an anesthetic. The child died without recovering consciousness. The defendant contended that the girl's death was due to the presence of an abnormally enlarged thymus gland. Subject to the plaintiff's exception, a physician who was a witness for the defendant was permitted to testify to an examination of the body of a girl 13 years old who had been taken to a hospital for the removal of enlarged tonsils and adenoids, and to state that her death "was due to syncope under the influence of a general anesthetic administered for surgical purposes in the presence of a 50-gram thymus gland." The defendant's contention that evidence of this collateral fact was admissible, as "a similar instance," could not prevail. An inference that the death of the plaintiff's intestate was due to the influence of chloroform in the presence of a thymus gland weighing 51 gm., or about 1⅔ ounces, could not properly be drawn from the mere fact that another child, of 13 years, with a 50-gm. thymus gland, died from the influence of a general anesthetic administered for surgical purposes. It did not appear that the conditions or circumstances, such as the health of the child, the amount of anesthetic administered, and other conditions affecting the result, were the same in the illustrative case and in the case in hand. Again, the defendant argued that the evidence was admissible as the reason on which the physician formed his opinion. But it was not offered on that ground. On the contrary, the physician expressly disclaimed any experience in the administration of anesthetics, and testified that he had no experience in recent years with a live human being so far as the use of chloroform or ether was concerned. It was apparent from the record that this testimony was likely to have weight with the jury, because the other physicians called by the defendant disclaimed any special knowledge as to thymus gland diseases and the effect of chloroform on those suffering from them. Wherefore the court is of

the opinion that the evidence in question was incompetent, and the exception to its admission must be sustained.

Although from a reading of the record it would appear that a physician called as a witness for the plaintiff might well have been permitted to testify as an expert, yet as the trial judge, who ruled that the witness was not qualified to answer as an expert, had an opportunity to observe the mental capacity of this witness (who had suffered a severe injury within a few years), and to form an opinion of the credibility of his testimony, this court is not quite prepared to say that in deciding whether the witness was qualified to give expert testimony there was such an abuse of judicial discretion as to constitute error in law.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, Chicago, June 9-13. Dr. Olin West, 535 North Dearborn Street, Chicago, Secretary.

American Association of Genito-Urinary Surgeons, Stockbridge, Mass., May 26-28. Dr. Henry G. Bugbee, 40 East 41st St., New York, Sec'y.
American Dermatological Association, Minneapolis, Minn., June 5-7. Dr. Udo J. Wile, 211 East Huron Street, Ann Arbor, Mich., Secretary.
American Gynecological Society, Hot Springs, Va., May 15-17. Dr. A. H. Curtis, 104 South Michigan Avenue, Chicago, Secretary.
American Laryngological Association, Swampscott, Mass., June 2-4. Dr. George M. Coates, 1811 Spruce Street, Philadelphia, Secretary.
American Laryngological, Rhinological and Otological Society, St. Louis, May 29-31. Dr. W. H. Haskin, 40 East 41st Street, New York, Sec'y.
American Neurological Association, Philadelphia, June 5-7. Dr. Frederick Tilney, 870 Madison Avenue, New York, Secretary.
American Ophthalmological Society, Hot Springs, Virginia, May 26-28. Dr. T. B. Holloway, 1819 Chestnut Street, Philadelphia, Secretary.
American Orthopedic Association, Baltimore, May 15-17. Dr. De Forrest P. Willard, 1630 Spruce Street, Philadelphia, Secretary.
American Otological Society, Swampscott, Mass., June 3-5. Dr. Thomas J. Harris, 104 E. 40th Street, New York, Secretary.
American Pediatric Society, Pittsfield, Mass., June 5-7. Dr. H. C. Carpenter, 1805 Spruce Street, Philadelphia, Secretary.
American Proctologic Society, New York, June 23-25. Dr. Joseph F. Montague, 540 Park Avenue, New York, Secretary.
American Psychiatric Association, Atlantic City, June 3-6. Dr. C. Floyd Haviland, Drawer 18, Capitol Station, Albany, N. Y., Secretary.
American Radium Society, Chicago, June 9-10. Dr. Edwin C. Ernst, Humboldt Bldg., St. Louis, Secretary.
American Society of Clinical Pathologists, Rochester, Minn., June 5-7. Dr. Ward Burdick, 652 Metropolitan Building, Denver, Secretary.
American Society of Tropical Medicine, Chicago, June 9-10. Dr. B. H. Ransom, Bureau of Animal Industry, Washington, D. C., Secretary.
American Urological Association, Atlantic City, June 3-5. Dr. Homer G. Hamer, 723 Hume-Mansur Building, Indianapolis, Secretary.
Arkansas Medical Society, Fayetteville, May 20-22. Dr. William R. Bathurst, 810 Boyle Building, Little Rock, Secretary.
Associated Anesthetists of the United States and Canada, Chicago, June 9-10. Dr. F. H. McMechan, Avon Lake, Ohio, Secretary.
California Medical Association, Los Angeles, May 12-15. Dr. Emma W. Pope, Balboa Building, San Francisco, Secretary.
Connecticut State Medical Society, Hartford, May 28-29. Dr. C. W. Comfort, Jr., 27 Elm Street, New Haven, Secretary.
Georgia, Medical Association of, Augusta, May 9-11. Dr. Allen H. Bunce, Healey Building, Atlanta, Secretary.
Maine Medical Association, Portland, June 25-27. Dr. B. L. Bryant, 265 Hammond Street, Bangor, Secretary.
Massachusetts Medical Society, Boston, June 6-7. Dr. W. L. Burrage, 182 Walnut St., Brookline, Secretary.
Medical Library Association, Chicago, June 9-10. Dr. John Ruhrah, 11 East Chase St., Baltimore, Secretary.
Medical Women's National Association, Chicago, June 9-10. Dr. M. J. Potter, First National Bank Building, San Diego, Calif., Secretary.
Mississippi State Medical Association, Jackson, May 13-15. Dr. T. M. Dye, Clarksdale, Secretary.
Nebraska State Medical Association, Omaha, May 13-15. Dr. R. B. Adams, 1013 Terminal Building, Lincoln, Secretary.
New Hampshire Medical Society, Manchester, June 24-25. Dr. D. E. Sullivan, 7 N. State Street, Concord, Secretary.
New Jersey, Medical Society of, Atlantic City, June 5-7. Dr. J. B. Morrison, 97 Halsey Street, Newark, Secretary.
New Mexico Medical Society, Santa Fe, May 27-29. Dr. Charles M. Yater, Roswell, Secretary.
Ohio State Medical Association, Cleveland, May 13-15. Mr. Don K. Martin, 131 East State Street, Columbus, Secretary.
Oklahoma State Medical Association, Oklahoma City, May 13-15. Dr. C. A. Thompson, 508 Commercial Nat'l Bank Bldg., Muskogee, Sec'y.
Pacific Northwest Medical Association, Vancouver, B. C., June 26-28. Dr. F. Eppler, 422 Paulsen Building, Spokane, Wash., Secretary.
Radiological Society of North America, Chicago, June 6-7. Dr. M. J. Sandborn, Appleton, Wis., Secretary.
Rhode Island Medical Society, Providence, June 5. Dr. I. W. Leech, 369 Broad Street, Providence, Secretary.
Southern Minnesota Medical Association, Mankato, May 19. Dr. H. T. McGuigan, Redwing, Secretary.
Utah State Medical Association, Logan, June 19-21. Dr. William L. Rich, Boston Building, Salt Lake City, Secretary.
Wyoming State Medical Society, Cody, June 17-19. Dr. Earl Whedon, Sheridan, Secretary.

MEDICAL SOCIETY OF THE STATE OF NEW YORK

One Hundred and Eighteenth Annual Meeting, held at Rochester, April 22-23, 1924

(Continued from page 1469)

SECTION ON MEDICINE

JOINT SESSION WITH SECTIONS ON PUBLIC HEALTH, HYGIENE AND SANITATION, PEDIATRICS, AND OBSTETRICS AND GYNECOLOGY

DR. CLAYTON W. GREENE, Buffalo, in the Chair

Results of Investigation of Causes of Death at Childbirth

DR. OTTO R. EICHEL, Albany: The death rate from child birth has been high in New York State for many years. From 1915 to 1921, it was from 40 to 70 per 10,000, and outside of New York City, it was from 53 to 83 per 10,000. Puerperal sepsis caused 27 per cent. of these deaths in New York State. From 1910 the death rate fell, but went up again in 1918, which was the peak year. It fell again, but never so low as in 1912. There is a regular seasonal mortality in New York State, the highest point being in March, and the lowest in September. There is a great variation in localities, the rural districts having a rate of 59 per 10,000, and up-state small cities 71 per 10,000. In institutions in large cities it is low, but in small towns it is very high. It is unfortunate that puerperal septicemia is not better reported as a disease. The deaths are higher than the cases reported. There were less than 0.5 per cent. of all cases in which midwives might be blamed. The deaths from all causes, including stillbirths, increases according to the number of children borne by a mother. It increases slightly after two children, and rises rapidly after seven children. The mortality is highest among native born, white mothers. In the foreign born, it is highest among Germans and Scandinavians, lowest among Jewish, Polish and Russians. The mortality among colored mothers is twice as high as among white mothers. One fifth of the deaths follow criminal interference. As to causes, toxemia of pregnancy is the highest contributing factor; 13 per cent. of cases are due to abortion or miscarriage; 13 per cent. are due to infective disease; 8 per cent. are due to placenta praevia; 12 per cent. are due to puerperal infection. In about 37 per cent. of cases the patient was supposed not to have received adequate medical care. In only about one case out of ten was a consulting physician unavailable; 50 per cent. of cases were operative, including cesarean sections, and in 40 per cent. of cases the patient was suffering from some disease, such as heart disease or tuberculosis, which contributed to her death.

DISCUSSION

DR. JAMES K. QUIGLEY, Rochester: That results in obstetrics are not what they should be, is well known. The reasons given for the high death rate are: (1) poor undergraduate training; (2) too little postgraduate study; (3) lack of interest on the part of the physician, due to drudgery and inadequate compensation. Midwives have been pretty generally blamed, but figures show that, in communities where midwives practice, the rate is low. The assumption that parturition is a normal physiologic process, without danger, is a mistake, as it leads patients to hesitate to put themselves under medical care in this condition. Proper prenatal care is important. In a series of 40,000 deliveries in which proper prenatal care was given the mother, there were no eclamptic deaths. While the lowest rate occurs when there is proper prenatal care, we should not neglect the aspect of postnatal care. There is a board of consultants for the state, to standardize maternity care properly. If practitioners of obstetrics would follow the directions outlined in the circular issued, they would show better results.

DR. GEORGE W. KOSMAK, New York: In regard to the attempt to exonerate midwives in the total number of sepsis cases, we do not take into consideration the fact that many of these cases occur in midwives' care and are passed on to physicians and the patients are saved. Many cases are thus not recorded in the practice of midwives, and they are not always reported as septic cases. I think that this question

of sepsis is not sufficiently emphasized; many more cases are successfully treated than we hear of. Better prenatal care should be given, and better hospital training to interns. The problem for the obstetrician is to devise some means of prophylaxis for this important class of cases.

Endemic Goiter: Its Prevention

DR. OLIVER P. KIMBALL, Cleveland: As long ago as 1895, it was shown that the normal thyroid contained iodin, and that the function of the gland depended on the iodin percentage. The thyroid was known to have a specific affinity for iodin, which it will take up until it is saturated with iodin. Hyperplasia and absorption of colloid are dependent on the iodin content of the gland. Animal experiment showed that if the iodin was kept at 0.1 per cent., that is, 1 mg. per gram, no hyperplasia could take place. It was therefore concluded that endemic goiter could be prevented by regulation of the iodin content, and in 1916 the work was started as a public health measure in the public schools in Akron, Ohio. An arbitrary standard was fixed, 3 grains daily of sodium iodid given in the drinking water. This was carried on for four years. We proved that if the thyroid is kept saturated with iodin, goiter cannot exist. In Zurich, Switzerland, they consider much smaller quantities of iodin sufficient. They give 5 mg. of iodin every Monday morning throughout the school year. They have had excellent results. The percentage of 18.6 in 1919 dropped to 13.1 in 1922. Since 1922 in this country, various state health boards have taken up the goiter problem. West Virginia has one third of its schools carrying out goiter prevention. In Washington and Oregon, last year, one city in each county was making a demonstration of methods and results, each child receiving 10 mg. of iodin, once a week. In Michigan, four different counties were studied comparatively. In one lake county with practically no iodin in the water, the goiter incidence was 70 per cent.; in two inland counties where the iodin content was 12 parts per billion, goiter averaged 32 per cent.; in another county, where iodin in the water was 64 parts per billion, it was 64 per cent. South of Detroit, where water iodin is 60 parts per billion, goiter averages 26 per cent. among school children. Iodin may be present in common salt. We have been working on the problem of iodized salt. The state department of health in Michigan enlisted the cooperation of salt packers and wholesalers. After next month no more salt will be sold in Michigan without the due amount of iodin. This will practically answer the goiter problem in Michigan and wherever this salt is sold. This has been effected without any increase in the price of salt. In regard to iodin in the city water supply, it is scientific in theory but unpractical in effect. A great deal of it is wasted. In iodizing salt, 1 part to 5,000 will make a difference in the price of $1 a ton. Probably 1:10,000 will be found sufficient. We want to give 5 grains of iodin each year to each child. If we did this we should prevent every goiter in puberty and in pregnancy. I have seen bad results from giving iodin indiscriminately. One must consider iodin as one would arsenic, and give it, not in grams, but in milligrams. Five or 10 mg. a week causes no trouble. If obstetricians would give a routine dose of 5 mg. of iodin they would be taking care of two thyroids during pregnancy, that of the mother and that of the fetus. If the fetal thyroid is properly supplied, adenoma cannot develop later in life.

DISCUSSION

DR. FREDERICK W. SEARS, Syracuse: We have started this work in two centers in Syracuse. We have treated 2,500 school children. I want to emphasize what Dr. Kimball has said about prenatal care in goiter. There is no reason why every pregnant woman should not receive a small amount of iodin to insure her child freedom from goiter. Many cretins and stunted men result from lack of this treatment. There was always a dry codfish hanging in the storeroom in my boyhood home. I enjoyed the salty flavor and would go and get a good bite of it. There were eight children in our family, and not one had goiter. Was this a question of the food? Perhaps salt fish had something to do with it.

DR. MYRON B. PALMER, Syracuse: We gave iodin in the form of attractive candy-like tablets, and got results. We examined 25,875 children. In high school children there was 20 per cent. of goiter, and in grammar school children 16 per cent. We made a classification of four types of goiter: (1) pregoitrous, or barely noticeable stage; (2) small; (3) medium, and (4) large. The second class was the largest. The pregoitrous stage children were given 10 mg. of iodin twice a week, and the others were given 10 mg. once a week. The result was good. A striking factor is gain in weight in young girls. Two hundred and twenty children gained weight; fifty-four lost weight.

DR. MATHIAS NICHOL, Albany: Many views have been expressed. One physician wants to put iodin in the water; another wants to put it in candy; another says he took his iodin from codfish. I want to know why it is not the duty of Congress to see that we get a salt that will stop this condition. I wrote to the Surgeon General's Office a year ago. I have now forgotten his exact answer, but I think he said that it did not seem practical. Why is it not a government duty to feed people proper salt? This piecemeal prevention does not seem to be sufficient. I should like Dr. Kimball to suggest a form of legislation that would fit this case and will allow each state to take care of itself in the same brilliant manner that Michigan is doing.

DR. GEORGE W. GOLER, Rochester: How are we going to get to the public on this matter? How are we going to reach the profession? I am heartily in favor of the addition of iodin to salt to prevent goiter. Why must we go to chocolate or to fancy priced salts? It would cost only $2 a ton to make salt a preventive of goiter. The whole question is of great importance but it is rather a food question than a question of medicine.

DR. OLIVER P. KIMBALL, Cleveland: This is not a federal problem for the reason that less than half the states have a goiter problem. Texas and Louisiana would not pay for iodin, because they have plenty. This matter probably never will get to Congress. Why, then, not make it a state problem? I believe we shall advance further with a few months of educative campaign in the counties where it is needed. In Michigan we do free advertising for the salt concerns. We also sent a letter from the state health department to every parent in Michigan, to every physician, to every school teacher and to every wholesale salt dealer. In this way we got the truth across better than by legislation. I believe we can persuade people to do things, but I don't believe we can *make* them do things. I did not mention any particular form of vehicle. I merely said iodin. I would ask that this be made a matter of public school education in the states that have need of goiter prevention. The children are under our control at the time when most attention should be given to the matter.

Development of the Shick Test

PROFESSOR BELA SCHICK, Vienna: This work began with studies of immunity in diphtheria. Not everybody exposed to diphtheria acquires the disease. Certain workers have found that they could not infect themselves by transplantation of infective membrane to the tonsils. After the discovery of diphtheria antitoxin it was found that 80 per cent. of newborn children possessed this antitoxin substance; after nine months this tended to disappear, but was regained with increasing age. These findings were of fundamental importance in the further development of the work. It was at first difficult to prove that a certain individual possessed antitoxin or was susceptible to diphtheria. Complicated methods were used, involving much animal experimentation. Pirquet, in his studies on vaccine allergy, proved the importance of the cutaneous reaction, and this was the basis of cutaneous diagnosis in such contagious conditions as tuberculosis. The organism reacts to cutaneous injection of infectious bacteria of foreign protein, and reacts more rapidly after repeated injection. The symptoms of the disease are due to a combination of the disease products, plus the antibodies. In 1907 I collaborated with Pirquet and studied the use of diphtheria toxin to produce the cutaneous reaction. My first experiments were negative, but after boiling down the toxin to a tenth of its volume I began to get results. I found that not only children with diphtheria, but also others who had never had it, especially at those ages between the twelfth month and the fifth year, gave positive reactions. We found that we were able to mix toxin and

antitoxin in vitro and get negative reactions. The reaction therefore was not entirely comparable to that of Pirquet, because in that only a person infected with tuberculosis would react to tuberculin. Diphtheria is toxic for any one who has no antitoxin in his organism. The positive reaction is due to lack of antitoxin. It was necessary, however, to prove that children suffering from diphtheria have no antitoxin in their blood cells. Our work in 1908 proved this point. There were early difficulties in preparation of antitoxin; the dosage had to be determined and standardized. The method was recommended to hospitals and institutions, and diphtheria toxin and antitoxin were injected to discover the necessary proportion per kilogram of body weight. It was found that the immunizing effect is according to body weight; the curative effect, however, is very limited. The test can be used to find out whether active immunization should be continued or not. The concentration of antitoxin in tissue tends to become lowered. This is an important point in the treatment of postdiphtheric paralysis. There exists in diphtheria a humoral and a cellular immunity, and protection in the disease depends on the ability to form antibody quickly. Active immunity is greater in New York, on account of repeated mild infection. It is very low in country districts. The work of physicians in America has stimulated work on this test in other countries in putting these new views to practical use. In the near future we shall be able to stamp out diphtheria as we have smallpox.

DISCUSSION

DR. WILLIAM H. PARK, New York: The Schick test stands practically unaltered and proved by enormous weight of personal experience. There is one point in his work that may allow a slight difference of opinion. It has been asked whether a negative Schick reaction proves that diphtheria cannot develop. I believe that in very mild cases of diphtheria a number of patients will be proved to have small traces of antitoxin, but not enough to give a negative Schick reaction. These patients later will develop much antitoxin and prove that they did have a former trace. There are a number of practical points that may be mentioned, although Schick has said the last word on theory. There is a simple test, on which Dr. Zingher has been working, that may be carried out very accurately. The toxin must be standardized or there will be too many positives or too many negatives. Dr. Schick tried to have all positives not immune, and all negatives immune, and he almost succeeded, so that with him a negative Schick reaction means that a child cannot develop diphtheria. A child, however, may develop a croupous tonsillitis, carrying diphtheria bacilli, and yet have a negative Schick reaction. This must be a tonsillitis occuring in a diphtheria carrier. It is estimated that there are 50,000 diphtheria carriers in New York City. They may develop tonsillitis, but they will not have diphtheria. Recently we had twelve cases of tonsillitis with diphtheria bacilli, and six were Schick positive. The seventh case showed slight antitoxin, but not enough to prevent a superficial membrane. That child got well. It is very difficult to say whether, plus tonsillitis, the inflammation was increased by diphtheria bacilli, even with a negative Schick reaction. We had 100,000 negative children, and the same number of controls, of whom one-third were positive. All the severe cases were among those Schick positive. One fifth were reported as being carriers. People think we are begging the question and will not acknowledge diphtheria when it exists; but I think there are some very mild forms but with some infection going on. We have never seen severe cases with a negative Schick reaction. The few mild ones can be dismissed as a danger point. There is one modification of the Schick test that I feel would answer under certain conditions if we give standard toxin-antitoxin. One cubic centimeter, given subcutaneously in the anterior part of the arm above the elbow in small children, will give a reaction one-half larger than the Schick, than by the Schick test given properly. In older persons, it is more difficult to detect pseudoreactions. I am suggesting that when physicians do not wish to give the Schick test they can use this substitute in young children, which is nearly equal in value to the real Schick test. The results do not vary in young children more than one fifth. In adults there are one-tenth more positives. This test cannot be used, however, for reinjection. Our diphtheria work was put on its feet in New York by this reliable, simple test developed by Dr. Schick.

DR. GEORGE W. GOLER, Rochester: The present fight against diphtheria was put on its feet by the work of Professor Schick. I can recall the time when we had a death a day, when the city was half its size. Now, in a city of 300,000, we have had only one resident death in four months. This is due to passive immunization with toxin-antitoxin. Every six years we have a diphtheria cycle. At present we are at the low end of the cycle, and physicians must not relax in their tests and in active immunization, or they may expect to have an outbreak of diphtheria next year.

DR. ABRAHAM ZINGHER, New York: We see diphtheria every day, and realize the tremendous significance of this work. We began to do this work in 1913. Dr. Park began to use the test in connection with toxin-antitoxin, to test specific individuals. In susceptible individuals we were able to reapply the Schick test subsequently to test the value of their immunization. The work was carried on in many institutions from 1914 to 1917. In 1918 we tested mothers and children in institutions, and found that immunizing substance was transmitted from the mother to the infant, but it was lost about the ninth month of life. Then I strongly urged that all children be actively immunized, because that is the only way to lay a foundation for a real plan to stamp out diphtheria, which is still a problem in our communities. I started the work in France in 1919. In England, Dr. Cobb of Edinburgh was the only one using the test, but the work rapidly spread. In 1920 I worked in institutes here. We have tested 400,000 children, and the test has proved of extreme value. We now have a test for scarlet fever susceptibility. This is due to the discovery and patient work of Dr. and Mrs. Dick of Chicago, and is named after them. The Dick test probably indicates the amount of susceptibility and immunity for scarlet fever with the toxin of the hemolytic streptococcus.

(To be continued)

Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

American Journal of Anatomy, Philadelphia

33: 1-173 (March) 1924

Sclerotoma of Murenoids. U. D'Ancona, Rome.—p. 1.
Changes in Weights of Organs and Parts of Leopard Frog During Inanition. M. D. Ott, Minneapolis.—p. 17.
Parthenogenesis and Rôle of Water Absorption in Formation of Subgerminal Cavity. G. W. Bartelmez and Oscar Riddle, Chicago.—p. 57.
*Endocrine Glands and Development of Chick. I. Effects of Thyroid Grafts. B. H. Willier, Chicago.—p. 67.
Three Anatomic Types of Africa. R. B. Bean, Charlottesville.—p. 105.
*Hereditary Structural Defects in Descendents of Mice Exposed to Roentgen-Ray Irradiation. H. J. Bagg and C. C. Little, New York. —p. 119.
*Nature of Mitochondria. VII. Independent Growth of Mitochondria in Culture Mediums. I. E. Wallin, Boulder, Colo.—p. 147.

Function of Thyroid in Development of Chick.—The purpose of Willier's investigation was to make an analysis of the function of the thyroid gland in the development of the chick. The thyroid grafts produced typical modifications in the host embryo: (*a*) the body was emaciated and considerably smaller (a shortening of the various axes) than the control, one third smaller in some cases; (*b*) shortening and emaciation of the segments of the wings, and particularly of the legs; (*c*) various internal organs (thyroid, gonads, etc.) were correspondingly reduced in size, and, (*d*) the amount of fat stored was less than in controls. Such modifications as reduction in size and emaciation of the body are regarded as hyperthyroid symptoms. These are interpreted to mean that metabolism was increased, more particularly there was an acceleration of catabolism over anabolism. So far as the evidence goes, the thyroid graft alone produces these metabolic changes. These experiments rather clearly demonstrate

that the thyroid tissue of the graft secretes a hormone into the blood circulation without the stimulation of specific secretory nerves.

Hereditary Eye Abnormality Caused by Roentgen Ray.—Abnormal eyes have been found by Bagg and Little in the third and subsequent generations of the descendents of a group of mice treated with comparatively light doses of unfiltered roentgen rays on five consecutive days. The eye abnormality exhibits a wide range of variation, from a slightly perceptible defect in one eye to nearly complete atrophy of both eyes. The eye defect is associated with marked optic atrophy and a deformity of the skull on the same side of the head with the defective eye. In a few cases the ear adjacent to the abnormal eye has shown a marked reduction in size. Many animals have shown the presence of club-feet associated with the abnormal eye condition. The defect mainly affects the soft parts of the foot, but the bones of the metacarpus and phalanges are also slightly reduced in size. There apparently is a general tendency to abnormal morphologic expression, as shown by the association of the eye and foot defects.

Mitochondria Are Bacteria.—Personal observation and the review of the work of others has convinced Wallin that the conclusion seems justified that mitochondria are, in reality, bacterial organisms, symbiotically combined with the tissues of higher organisms.

Boston Medical and Surgical Journal

190: 623-652 (April 10) 1924

End-Results of Pediatric Practice as Seen in Adolescents. R. I. Lee, Cambridge, Mass.—p. 623.
Foreign Bodies in Larynx, Trachea and Bronchi. D. C. Greene, Boston.—p. 626.
Indications and Contraindications for Circumcision in Children. T. H. Lanman, Boston.—p. 628.
*Placenta Praevia. F. J. Lynch, Boston.—p. 631.
Chronic Arsphenamin Poisoning Treated with and Without Intramin. H. D. Lloyd, Boston.—p. 634.
*Unusual Case of Appendicitis. C. L. Upton, Shelburne Falls, Mass.—p. 634.

Analysis of Placenta Praevia Cases.—Ninety-two cases of placenta praevia are analyzed by Lynch, of which twenty-six were of the complete variety, thirty-seven partial, and twenty-nine marginal. In considering parity, the most frequent were para two, four and three. Nineteen mothers died, a gross mortality of 20 per cent. The fetal mortality was 55 per cent., but of this number twenty-six fetuses were nonviable and two macerated, making a corrected fetal mortality of 25 per cent. Of forty-three women delivered by manual dilatation of the cervix, fifteen died, a maternal mortality of 35 per cent. Twenty-eight babies died, of which fifteen were nonviable, making a corrected fetal mortality of 22 per cent. Braxton-Hicks' version was resorted to in four cases, with four mothers and one baby discharged well. The three babies that died were of a nonviable age. Therefore, no maternal or viable fetal death occurred. Six women were delivered by cesarean section with no maternal mortality. One fetal death was due to hemorrhagic disease of the new-born. Of the six cases treated by packing the lower uterine segment and vagina, three mothers died. Five babies died, four of which were nonviable, making a corrected fetal mortality of 17 per cent. In those cases of marginal placenta praevia treated by rupturing the membranes, all mothers and babies were discharged well. Of the two vaginal cesarean cases, both mothers were discharged well, and there was no viable fetal mortality. In the two cases of multiple incisions of the cervix, both mothers were discharged well. Both babies died, one of which was of viable age. The hydrostatic bag is held to be the method of treatment of choice.

Tooth Found in Appendix.—Upton relates the case of a man, aged 79, with symptoms of an irreducible right inguinal hernia with partial obstruction, whom he operated on under local anesthesia. As soon as the sac was opened there was a "tremendous" flow of pus. No intestine or omentum was felt but there was a foreign body, which on extraction proved to be a tooth. High up in the internal ring were found the remains of a sloughed off appendix. The patient admitted having swallowed the tooth about six weeks previously.

Florida Medical Association Journal, St. Augustine and Jacksonville

10: 237-262 (March) 1924

Plea for Saner Methods in Examining Insanity Suspects. T. A. Neal, Orlando.—p. 237.
Epidemic Encephalitis. H. R. Drew, Jacksonville.—p. 238.
Ocular Headaches. J. W. Taylor, Tampa.—p. 242.
Twisted Pedicle Ovarian Tumor with Strangulation. T. S. Field and R. B. McIver, Jacksonville.—p. 243.
Roentgenography of Accessory Sinuses. G. Raap, Miami.—p. 248.
Plaster Cast Treatment in Gonorrheal Arthritis. R. W. Blackmar, Jacksonville.—p. 253.

Medical Journal and Record, New York

119: 333-380 (April 2) 1924

Aspects of Focal Infections Commonly Misunderstood. H. C. Bumpus, Jr., Rochester, Minn.—p. 333.
*Microgastria. R. L. Hoyt, Baltimore.—p. 338.
Prophylaxis and Serum Therapy of Typhus Fever. S. Kagan, Boston.—p. 340.
Anorectal Operations Under Local Anesthesia. J. F. Saphir, New York.—p. 342.
Seborrheic Diathesis. M. Scholtz, Los Angeles.—p. 344.
Prolapse of Ventricle of Morgagni. Two Cases. Sabrazès and A. Lussan, Bordeaux.—p. 348.
Common Errors in Urinary Diagnosis. W. S. Pugh, New York.—p. 352.
Tuberculosis in Germany. S. A. Knopf, New York.—p. 355.
Infant Feeding. J. Aikman, Rochester, N. Y.—p. 356.
Protein Milk in Pediatrics. A. I. Blau, New York.—p. 359.

SUPPLEMENT

Unrecognized Fractures of Skull in Infants and Children. A. W. Pollack, New York.—p. lxv.
Postdiphtheritic Paralysis. A. G. Terrell and D. H. Hallock, Southampton, N. Y.—p. lxviii.
Juvenile Tabes Dorsalis with Destruction of Hips from Charcot's Disease. W. G. Elmer, Philadelphia.—p. lxx.
Epidemic Infantile Paralysis. H. B. Sheffield, New York.—p. lxxii.
Relationship of Infant and Crude Mortality Rates. D. M. Lewis, New Haven, Conn.—p. lxxvi.
Abdominal Pains in Children. H. S. Snyderman, Philadelphia.—p. lxxviii.
Appendicitis and Peritonitis Complicating Scarlet Fever. B. Newman, Brooklyn.—p. lxxx.

Microgastria.—Instead of having a stomach capacity of about 300 c.c., which is normal for an infant of 36 weeks, Hoyt's patient had a capacity of 30 c.c. without pressure and 50 c.c. with pressure. The symptoms in this case were persistent vomiting and extreme inanition.

Michigan State Medical Society Journal, Grand Rapids

23: 139-190 (April) 1924

Modern Health Education in Public Schools. A. P. Biddle, Detroit.—p. 139.
Tuberculous Glands. W. S. O'Donnell, Ann Arbor.—p. 144.
Von Jaksch's Disease; Anemia Infantum Pseudoleukemica: Case. C. A. Wilson, Detroit.—p. 145.
Blood Transfusion. G. E. White, Detroit.—p. 147.
*Diet in Anemia of Infancy and Childhood. B. R. Hoobler, Detroit.—p. 150.
Blood Coagulation. A. M. Kohn, Detroit.—p. 152.
Gastric Obstruction. C. E. Vreeland, Detroit.—p. 155.
*Clinical Alkalosis in Gastric Disease. J. B. Youmans and I. W. Greene, Ann Arbor.—p. 160.
Prognosing Cure of Peptic Ulcer. F. Smithies, Chicago.—p. 163.

Diet in Anemia of Infancy.—Hoobler agrees with others that high carbohydrate diets contribute to the anemias of infancy and childhood, and that a mixed diet, represented in Whipple's experiments by bread, rice, potato and milk, favors blood regeneration. Hoobler urges that much more attention should be paid to the dietary treatment of anemias than in the past. Dependence should not be wholly on iron or arsenic, or both, but together with these, an adequate diet rich in iron and vitamin should be supplied. The feeding of animal substances should be accompanied with vegetable and cereal diets also rich in iron, and care should be exercised that there be no vitamin deficiency.

Alkalosis in Gastric Disease.—Youmans and Greene found that some patients with common types of gastric disease associated with a not unusual grade of vomiting are in a state of alkalosis even in the absence of signs and symptoms of tetany, in other words, a pretetanic alkalosis. The degree of alkalosis paralleled roughly the severity of the vomiting. It is probable that the milder cases were of the compensated variety. In all cases the hydrochloric acid content of the

test meal or vomitus was normal or high. In most cases the blood and urinary chlorids were found to be low. Four cases are cited, the treatment of which consisted in the control of vomiting. Rest and restriction of food suffices for the milder cases and is particularly indicated prior to operation. In the more severe cases, and particularly in those with signs of tetany, early surgical intervention is often indicated. Operation has not, however, proved particularly successful, possibly because of the alkalosis. In such cases, and particularly prior to operation, the procedure suggested by McCann may be indicated. It consists in the intravenous injection of ammonium chlorid which tends to produce an acidosis and thereby balance the alkalosis.

Military Surgeon, Washington, D. C.

54: 385-512 (April) 1924

Principles of Evacuation. III. Army Corps and Army Evacuation. T. L. Rhoads.—p. 385.
War College Training for Medical Officers. D. N. Carpenter.—p. 419.
Medical Officer in General Service School. T. E. Darby.—p. 423.
Finance and Supply Division. C. C. Whitcomb.—p. 426.
Analysis of Eighty Cases of Appendicitis. T. S. Mebane.—p. 436.
National Loss from Tuberculosis. J. G. Townsend.—p. 440.
Organization of Sanitary Service of German Army During World War.—Pflugmacher.—p. 444.
Warfare Gas and Tuberculosis. H. L. Gilchrist.—p. 470.

Missouri State Medical Association Journal, St. Louis

21: 99-136 (April) 1924

Calculus Anuria. J. R. Caulk, St. Louis.—p. 99.
Essential Hypertension: Primary Hyperadrenalism. A. Sophian, Kansas City.—p. 102.
*Effect of Arsphenamin on Coagulability of Blood. G. H. Copher, St. Louis.—p. 106.
*Implanting Bone Graft in Spine. S. A. Grantham, Joplin.—p. 107.
Diarrhea of Infants and Children. W. E. Bess, Sedalia.—p. 109.

Arsphenamin and Blood Coagulability.—According to Copher, blood coagulability is not appreciably changed by the ordinary dose of arsphenamin administered intravenously.

Bone Graft for the Spine.—Grantham describes a method which calls for the preparation of a sort of tunnel by means of a specially designed osteotome. When a straight graft is desired, a straight instrument and a tibial graft are used; when a curved graft is required, as in the dorsal and lumbosacral regions, a curved instrument and a rib suffice. The graft, placed in direct bony contact; is held in situ by the uncut lumbodorsal fascia, and is supported laterally by the muscles of the back. No foreign substance is used for the fixation of the graft so placed.

Nebraska State Medical Journal, Norfolk

9: 117-156 (April) 1924

Diagnostic Methods. A. D. Dunn, Omaha.—p. 117.
Diagnosis of Renal and Ureteral Calculi. C. H. Bastron, Lincoln.—p. 122.
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Irregularities of Heart. W. R. Peters, Stanton.—p. 129.
Tonsillar Intoxication. G. A. Griot, Chadron.—p. 136.
Tuberculosis in General Practice. M. J. Breuer, Lincoln.—p. 138.
Facts About Diet. E. W. Rowe, Lincoln.—p. 142.
Recognition of Specific Hay-Fever Pollens. F. L. Long, Tucson, Ariz.—p. 147.
Vaccination. A. P. Fitzsimmons, Tecumseh.—p. 148.

New Jersey Medical Society Journal, Orange

21: 115-146 (April) 1924

Complications of Diabetes in Patients Under Insulin Treatment. R. E. Allen, Morristown.—p. 115.
Rhinoplasty from an Artist's Standpoint. L. P. Berne, New York.—p. 121.
Tuberculosis in Childhood. M. H. Bass, New York.—p. 124.
Focal Infection in Relation to Pulmonary Tuberculosis. G. R. Satterlee, New York.—p. 128.
Kahn and Wassermann Tests of Blood Serum and Spinal Fluid. J. F. Anderson and E. B. Fischer, New Brunswick.—p. 132.

New Orleans Medical and Surgical Journal

76: 451-484 (April) 1924

Postoperative Pulmonary Embolism. J. E. Heard, Shreveport.—p. 451.
Duodenal Ulcer: Surgical Treatment. H. Finsterer, Vienna.—p. 459.
Fibroids of Uterus. C. J. Miller, New Orleans.—p. 461.
Marsh Grass Removed from Urinary Bladder. T. H. Watkins and O. W. Moss, Lake Charles.—p. 465.

Ohio State Medical Journal, Columbus

20: 201-262 (April) 1924

Treatment of Syphilis and Influence on Nervous Involvement. E. A. North, Cincinnati.—p. 213.
Maternal Birth Injuries. W. D. Fullerton, Cleveland.—p. 216.
Treatment of Chronic Catarrhal Otitis Media. H. M. Goodyear, Cincinnati.—p. 220.
Cooperation in Public Health Work. F. R. Dew, Barnesville.—p. 224.
Radium in Medicine. C. J. Broeman, Cincinnati.—p. 226.

Oklahoma State Medical Association Journal, Oklahoma City

17: 84-105 (April) 1924

Management of Abortion. A. C. Hirshfield, Oklahoma City.—p. 84.
Case of Double Legg's Disease. S. R. Cunningham, Oklahoma City.—p. 90.
Three Cases of Diaphysial Aclasis. S. R. Cunningham, Oklahoma City.—p. 90.
Case of Diaphragmatic Hernia of Colon. J. T. Martin, Oklahoma City.—p. 92.

Southern Medical Journal, Birmingham, Ala.

17: 233-304 (April) 1924

Factors Regulating Cellular Growth in Explanation of Cancer. M. T. Burrows, St. Louis.—p. 233.
*Chronic Intestinal Stasis. J. Friedenwald, Baltimore.—p. 243.
*Important Etiologic Factors in Cardiovascular Diseases. N. P. Barnes, Washington, D. C.—p. 252.
Pyrexias of Obscure Origin in Children. P. F. Barbour, Louisville.—p. 256.
Shadows of Thymus and Heart. L. R. DeBuys and E. C. Samuels, New Orleans.—p. 260.
Value of Complete Accurate Statistics. W. A. Plecker, Richmond, Va.—p. 265.
Sterility: Study of 526 Patients. G. L. Hunner and L. R. Wharton, Baltimore.—p. 269.
Nephrectomy in Nonmalignant Diseases of Kidney. A. I. Dodson, Richmond, Va.—p. 277.
Hemorrhages in Later Months of Pregnancy. J. O. Polak, Brooklyn, N. Y.—p. 281.
Surgical Therapy in Peptic Ulcer. H. Reed, Oklahoma City.—p. 284.
Technic of Pansinus Operation. R. C. Lynch, New Orleans.—p. 289.
Inflammatory Disease of Nasal Accessory Sinuses. M. F. Arbuckle, St. Louis.—p. 293.
Medicine as International Influence. G. E. Vincent, New York.—p. 298.

Chronic Intestinal Stasis.—Friedenwald emphasizes the point that the symptom complex of intestinal stasis and toxemia cannot be explained alone on the basis of a mere mechanical conception of alteration in the motility of the intestine. Besides this, there remains the question of bacterial invasion, disturbances of innervation of the bowel, and of the endocrine system; production of pathologic lesions in the bowel; changes in the intestinal secretions and food decomposition with the formation of toxic products. Which factor plays the most important rôle, it seems as yet impossible to determine.

Etiology of Cardiovascular Disease.—Barnes advises that more attention be given to constitutional heritage and to the children of parents having "rheumatism" and cardiovascular diseases; to infections and bacterial diseases of childhood, with especial reference to their complete recovery, and the detection and removal of all foci of infection; to the causes of capillary spasms and hypertension, with especial reference to defects of infancy and childhood, endocrine and reflex disturbances, autointoxication and intestinal intoxication; to educating the laity in regard to the causes of cardiovascular diseases and in the importance of keeping well; of the need of proper relaxation, recreation, work and exercise.

West Virginia Medical Journal, Huntington

19: 169-224 (April) 1924

Tuberculosis as Municipal Responsibility. P. H. Ringer, Asheville, N. C.—p. 169.
"Milk Anemia in Infancy." Two Cases. G. M. Lyon, Huntington.—p. 179.
*Acute Intestinal Obstruction in Infants. A. G. Rutherford, Welch.—p. 190.
Cancer of Mouth and Larynx. H. E. Oesterling and R. A. Tomassene, Wheeling.—p. 191.
Gas Bacillus Infection of Leg Treated Without Amputation. E. B. Henson, Charleston.—p. 192.
Coal Tar Ointment in Infantile Eczema. H. T. Phillips, Wheeling.—p. 194.
Medical Ideals to Be Attained.—O. B. Biern, Huntington.—p. 195.

Acute Intestinal Obstruction in Infants.—Rutherford reports two cases of acute intestinal obstruction in infants.

The first was a complete indirect inguinal hernia, right side, with strangulation of the intestine. The other was that of a child presenting cardinal symptoms of obstruction. At operation was found an intussusception of the ilium and a finger-like projection springing from the antimesenteric border of the ilium about 2½ feet from the ileocecal valve. In all probability the primary cause of the intussusception was the Meckel's diverticulum.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

1: 559-612 (March 29) 1924

Rectal Surgery. C. Gordon-Watson.—p. 559.
*Cancer Producing Factor in Tar. E. L. Kennaway.—p. 564.
Relation of Manure to Nutritive and Vitamin Value of Grain. R. McCarrison.—p. 567.
Treatment of Fracture of Humerus at Birth. T. W. Froggatt.—p. 570.
Apparatus for Dislocation of Acromial End of Clavicle. D. I. Currie.—p. 570.
*Pituitary Extract in Asphyxia Pallida Neonatorum. J. G. Cormack.—p. 570.
Lardaceous Disease Following Empyema. A. R. Fox.—p. 571.
Hemorrhage in the New-Born Treated by Injections of Paternal Blood. H. M. Eyres.—p. 571.
Acidosis Traced to Infection by Bacillus Coli. J. Fraser.—p. 571.

Cancer Producing Factor in Tar.—Kennaway presents the evidence, from both the industrial and experimental sources, which indicates the presence or absence of carcinogenic power in different fractions obtained from coal tar and in the pure substances isolated from it. The attempts to find the cancer producing substance among the known constituents of coal tar have given negative results. Anthracene, phenanthrene, chrysene, picene, retene, truxene, acenaphthene, fluorene, acridin, carbazol, anilin, benzene, toluene and xylene have been excluded by experimental tests; and either the experimental or industrial evidence, or both of these, is against the importance of naphthalene, the acids, bases and other nitrogenous compounds, paraffins, olefines and naphthenes. It now seems not unlikely that this substance is an unknown compound, which is unstable and present in amounts perhaps as small as those of the vitamins in foods; as in the case of some hormones, its identification may be long delayed even when very concentrated preparations can be obtained. The substances which are known to be present in coal tar have been isolated because they are specially abundant, or stable, or capable of forming well defined compounds; the unknown substances are unknown because they have not these properties, and the cancer producing substance may well be among them.

Pituitary Extract in Asphyxia Pallida Neonatorum.—Cormack reports striking results from the use of pituitary extract, by injection, in two cases of asphyxia pallida in newly born children.

Glasgow Medical Journal

101: 109-171 (March) 1924

Leprosy Research; Bearing on Tuberculosis Problem. L. Rogers.—p. 109.
Human Blood Grouping. J. R. Learmonth.—p. 116.
Chinese Foot Binding. H. C. Patrick.—p. 135.
Roentgen-Ray Examination of Alimentary Tract. J. R. Riddell.—p. 140.

Indian Medical Gazette, Calcutta

59: 117-168 (March) 1924

Malaria in Shillong (India). T. C. McC. Young.—p. 117.
Malaria Near Kurseong and Antimalarial Operations. C. Strickland.—p. 119.
*Use of Sensitized Antiplague Vaccine. C. J. Stocker and G. F. Graham.—p. 121.
Intravenous Injections of Iodin in Septicemia and Other Septic Conditions. F. P. Connor.—p. 125.
*Liver Function Tests and Carbon Tetrachlorid. J. P. Bose and A. K. Mukerji.—p. 127.
Deterioration of Insulin in India. H. Stott.—p. 130.
Intravenous Dosage of Sodium Cacodylate. D. M. Vasavada.—p. 131.
Potency of Insulin in Tropics. J. P. Bose.—p. 132.
Failure of Vitex Peduncularis in Treatment of Malaria. R. N. Chopra, R. Knowles and J. C. Gupta.—p. 133.
Common Ailments of Children; Identification and Treatment. V. B. Green-Armytage.—p. 135.
Case of Abdominal Injury Treated by Resection and Enterorrhaphy. S. C. Das Gupta.—p. 141.
Ascaris Lumbricoides and Severe Hemorrhage in Case of Mixed Type of Dysentery. P. B. Karkarey.—p. 141.
Case of Perforating Injury of Eye from Foreign Body. A. D. Schroff.—p. 142.

Use of Sensitized Antiplague Vaccines.—The results obtained from the use of sensitized antiplague vaccines are summarized by Stocker and Graham as follows: Of those who were not prophylactically inoculated and who were treated with the sensitized vaccine, five died out of seventeen (29.4 per cent.). Of the five who died, one aborted and died of heart failure three days after the temperature had come down to normal following the use of the vaccine; two had pneumonia as a complication, and one died within a few hours of receiving the first and smallest dose, being practically moribund on admission. Of those who were not prophylactically inoculated and who were not treated with the sensitized serum, eleven died out of eighteen (61.1 per cent.). Of those who were prophylactically inoculated and who were treated with the sensitized serum, one died out of twelve (8.3 per cent.).

Liver Function Improved by Carbon Tetrachlorid.—To determine whether any functional disturbance of the liver is caused by therapeutic doses of carbon tetrachlorid, Bose performed levulose tolerance tests in eight uncomplicated cases of ancylostomiasis. Pure carbon tetrachlorid, 70 minims, with a purge (preferably 1 ounce of saturated solution of magnesium sulphate) constituted a single adult dose and was repeated the next day. The course was repeated, if necessary, after seven days. Apparently there resulted no damaging effect on the liver. In fact, two cases which showed a slight deficiency in the functions of the liver before treatment showed no further deficiency after a full course of carbon tetrachlorid.

Journal of Laryngology and Otology, Edinburgh

39: 181-244 (April) 1924

*Metastatic Malignant Tumor of Larynx Secondary to Adenocarcinoma of Right Kidney. A. L. Turner.—p. 181.
Osseous and Cartilaginous Formations in Tonsils. I. Moore.—p. 195.
Case of Acute Bilateral Otitis Media Associated with Large Abscess of Right Frontal Lobe. J. W. Leitch.—p. 209.
Case of Herpes Auris. E. H. Richards.—p. 213.

Adenocarcinoma of Larynx Secondary to Kidney Tumor.—Turner's patient was 70 years of age. His first complaint was hoarseness. Examination disclosed impaired mobility of the right vocal cord, due to a swelling immediately beneath and parallel with it. Later, a slight fulness was detected in the right loin on palpation, but in the absence of subjective symptoms, no special significance was attached to it. The patient drew his physician's attention to a swelling in the region of the right deltoid muscle. At the second visit, about three weeks after the first, the patient complained of slight difficulty in breathing at night. The right vocal cord then presented a faintly edematous appearance, and was found to be immobile in the middle line. The swelling on the outer aspect of the right upper arm appeared to involve the deltoid muscle and was about the size of a small orange, and was covered with normal skin. The tumor was of firm consistence. A low tracheotomy was performed. The right lateral wall of the subglottic area was occupied by a smooth, pale swelling, increasing in size from below upward, so that its most prominent part lay immediately beneath the right vocal cord, the under surface of which was concealed from view. A small portion of the deltoid tumor was removed for microscopic examination. The opinion was expressed that, in all probability, the tumor would prove to be a metastasis secondary to a hypernephroma. The patient became slowly weaker and died from exhaustion. The arm and larynx tumors proved to be metastatic from a kidney tumor.

South African Medical Record, Cape Town

22: 89-112 (March 8) 1924

Treatment by Direct Stimulation in Leukopoiesis, Influenza and Other Diseases. C. Lundie.—p. 91.
Interdependence of Branches of Medical Profession. C. E. Jones-Phillipson.—p. 94.
Fallacies in Treatment of Early Syphilis. A. R. Fraser.—p. 97.
Case of Rabies (?). C. J. Albertyn.—p. 98.

Bulletin de l'Académie de Médecine, Paris

91: 395-415 (March 25) 1924

Incompatibility, in Contract Practice, of the Function of a Treating Physician with That of a Controlling Expert. V. Balthazard.—p. 404.
Insulin Titration. A. Desgrez et al.—p. 407.

Bulletin Médical, Paris

38: 317-336 (March 22) 1924

*Nature of Dementia Praecox. H. Claude and A. Brousseau.—p. 323.

Differentiation of Schizophrenia.—Claude and Brousseau insist on distinguishing two main types under the broad expression "dementia praecox." This term includes the type of simple, degenerative, puerile self-absorption, and mental weakness of emotional nature, and also the type consisting in complicated ideational delusions, illusions and hallucinations with retained but "dislocated" mental activities. They believe it is confusing to have these different types united under the same name.

Comptes Rendus de la Société de Biologie, Paris

90: 662-724 (March 21) 1924. Partial Index

*The Menstrual Crisis. A. C. Guillaume and R. Godel.—p. 666.
Icterohemorrhagic Spirochete of Rats. C. Bonne.—p. 668.
*Testis Insufficiency. P. Harvier and L. Van Bogaert.—p. 672.
Terminal Spore Anaerobes in Human Intestines. P. Aznar.—p. 674.
Weight of Children of Tuberculous Mothers. R. Debré.—p. 682.
A Spirochete Endemic of River Mud. E. Etchegoin.—p. 682.
*Mitochondria and Precollagen Fibrils. E. Laguesse.—p. 687.
*Specific Antibodies in Helminthiasis. G. Isbecque.—p. 691.
Serum Reactions in Rhinoscleroma. A. E. de Aréa Leao.—p. 693.
The Bacteriophage. J. da Costa Cruz.—p. 694.
Immunization of Dogs Against Rabies. Z. Szymanowski and S. Sienczewski.—p. 697.
Bacteriology of Experimental Typhus. B. Fejgin.—p. 701.
Bacterial Neutralization of Acids and Bases. S. Sierakowski and F. Milejkowska.—p. 704.
Injury from Arsphenamin with Complicating Malaria. G. Marinesco and S. Draganesco.—p. 707.
Nervous and Toxic Diabetes. N. C. Paulesco.—p. 711.
Pancreatic Diabetes. N. C. Paulesco.—p. 713.
Treatment of Diabetes. N. C. Paulesco.—p. 714.
Ambard's Laws. N. C. Paulesco et al.—p. 716 and p. 718.
Thyroid and Anaphylaxis. A. Popea and I. Constantinescu.—p. 720.
Separation of Globulins from the Serum. G. Proca.—p. 721.

The Menstrual Crisis.—Guillaume and Godel classify the disturbing menstrual changes as digestive, circulatory and metabolic. They contend that there is an alternation of vagotony and sympathicotony, the former phase appearing about one week prior to the hemorrhage, the latter starting about four days previous to, and terminating a few hours before the onset of the menstrual discharge. Dysmenorrhea seems to be caused mostly by exaggerated physiologic conditions.

The Basal Metabolism in Testis Insufficiency.—Harvier and Bogaert report one case in which the basal metabolism had diminished, due to atrophy of the testes. But in three other cases of atrophy of the testes accompanying a tendency to development of female characteristics and growth, the basal metabolism was within normal range.

Mitochondria and Precollagen Fibrils.—In his discussion of the genetic interrelation between mitochondria and precollagen fibrils in loose areolar connective tissue, Laguesse found that the former is not indispensable to the development of the fibrils.

Specific Antibodies in Helminthiasis.—Isbecque's research seems to prove that complement fixation is always positive in patients with helminths if the test is performed with the corresponding antigen. The reaction is, however, not absolutely specific, since an *Ascaris* antigen may yield in those infested with trichocephalus positive complement fixation. The fixation test is almost always negative in the apparently healthy.

Anales de la Facultad de Medicina, Montevideo

8: 1091-1188 (Dec.) 1923

Deep Roentgen-Ray Treatment. C. Butler.—p. 1091.
*The Pituitary and Basal Metabolism. J. Montes Pareja.—p. 1102.
Study of the Reactions of Serums. E. Claveaux.—p. 1118.
Gallstones in Accessory Hepatic Duct. A. Navarro.—p. 1137.
*Uremia. P. Escuder Nuñez and E. Valerio.—p. 1143.
Insulin in Uruguay. César Bordoni Posse.—p. 1146.

Basal Metabolism in Pituitary Disease.—Montes Pareja gives an illustrated description of several among his twelve patients with pituitary affections of various kinds in the last two years, tested for pituitary functioning by biologic, threshold and other tests, and the basal metabolism determined. The findings confirm that the pituitary has an influence on the basal metabolism analogous to that of the thyroid, increasing it with hyperfunction and reducing it with deficient functioning. In the 150 cases in which he studied the basal metabolism, there was no constant relation between the basal rate and the degree of acceleration of the pulse.

Intense Uremia.—The young man died from pure hemorrhagic uremia, the blood showing 11.35 gm. urea and the spinal fluid 8.50 gm. per liter. There was no hypertension, edema or tube-casts, and only slight albuminuria. There had been moderate headache for three months before the hemorrhagic and speedily fatal manifestations developed.

Prensa Médica Argentina, Buenos Aires

10: 681-704 (Feb. 29) 1924

*Roentgen Rays and the Fetus. A. Peralta Ramos and J. E. Bazán.—p. 681.
Serous Cyst in Eye. A. Gowland and J. A. Gallino.—p. 685.
The Maragliano Method of Serodiagnosis of Tuberculosis. P. M. Barlaro.—p. 687.
Curettage of the Uterus. F. P. Borgarelli and M. Sorocc.—p. 690.
Insulin Treatment. P. M. Barlaro.—p. 696. Cont'n.

Action of Roentgen Rays on Eight Months Fetus?—Three years after ovariectomy for sarco-epithelioma, a metastasis in the mediastinum was given three applications of deep roentgenotherapy under which the symptoms subsided. The woman, aged 27, with two healthy children, returned eight months later in advanced pregnancy, complaining of severe recurrence of the pains. She was given a fourth exposure, a three hour sitting, the abdomen protected. Ten days later the child was born, an 8½ months' pregnancy. The skull bones showed islands of defective ossification, and in a few days the child developed a desquamating erythrodermia covering the entire body but most pronounced on the scalp. The roentgen exposure relieved the woman's pains and she has been in good condition to date.

10: 705-729 (March 10) 1924

*Bilirubinemia. C. Bonorino Udaondo and J. E. Carulla.—p. 705.
*Congenital Tumor of the Kidney. C. Lagos García.—p. 711.
Traumatism in Development of Cancers. D. Brachetto-Brian.—p. 720.
Physiologic Action of Insulin. P. M. Barlaro.—p. 721.

Estimation of Bilirubinemia.—Bonorino and Carulla assert that the Meulengracht colorimetric method, which is within the reach of every practitioner, is accurate enough for all practical purposes. They found 4 or 5 units the range in twenty-seven normal persons. They classify the tabulated details from ninety-three cases of various clinical pictures. A tendency to jaundice did not become apparent until the number of units reached 13 to 16.

Congenital Tumor of the Liver.—Lagos García states that only three cases of this kind have been encountered in twenty years at the Buenos Aires children's clinic. The ages in these cases ranged from 3½ to 10 months. The large size of the tumor confirmed that it was congenital. The operation revealed inoperable conditions in the two older infants, but the hepatoma was successfully removed in the other, cutting out a wedge of liver tissue containing the neoplasm. The wedge weighed 100 gm. and measured 8 by 10 cm., and the little girl has developed normally during the three and a half years to date.

Semana Médica, Buenos Aires

1: 459-498 (March 13) 1924

*Radiotherapy of the Thymus. J. F. Merlo Gómez.—p. 459.
Compression of Laryngeal Nerve by Aneurysm. J. R. Goyena.—p. 462.
Deformity of Legs from Rickets. C. Lagos García.—p. 464.
Legislation on Care of the Insane. M. P. Cabella.—p. 473.
*Appendicitis Simulating Pulmonary Tuberculosis. F. R. Torres.—p. 475.
Differential Reaction for Carbonate and Bicarbonate. L. Rossi.—p. 478.
Operative Treatment of Pulmonary Tuberculosis. Capelle.—p. 479.
Teaching Toxicology and Industrial Hygiene in Military Medical Schools. C. Trejo.—p. 484.

Epileptiform Symptoms in Intestinal Autoinfections. E. Lamas.—p. 486.
Plasmogenesis: Imitations of Mitosis. A. L. Herrera.—p. 489.

Treatment of Thymus Disturbance.—Merlo Gómez quotes Veau, who proclaimed at the last French surgical congress that roentgenotherapy has won the first place in treatment of the thymus. Merlo Gómez then describes with illustrations the rapid subsidence, after a single exposure to the roentgen rays, of a large protruding tumor in the thymus of a boy of 14. The tumor had developed in less than three weeks, and the suffocation compelled immediate intervention. Improvement was evident in a few hours, and there have been no further symptoms from the suprasternal tumor during the four months to date. The aspect of the neck is normal.

Chronic Appendicitis Simulating Pulmonary Tuberculosis.—Torres reports that a young woman had for years been having recurring attacks of cough, with blood in the sputum, abdominal pains spreading down the legs, congestion in lungs and vomiting. The hemoptysis was severe at the fourth attack and there was vomiting and kidney colic. He ascribes the development of the renal calculus, finally expelled, to the forced feeding in treatment of the assumed tuberculous process shown at the apex by roentgenoscopy. No tubercle bacilli had been discovered. Symptoms suggesting acute appendicitis accompanied another attack later, and appendectomy was followed by clearing up of the congestive processes in the lungs, the whole syndrome vanishing completely.

Beiträge zur klinischen Chirurgie, Tübingen

131: 1-259, 1924

*Pathology of Mammary Cancer. H. Küttner.—p. 1.
*Drainage in Suppurative Meningitis. H. Hauke.—p. 10.
*Multiple Cerebellopontile Tumors. V. E. Mertens.—p. 33.
*Cerebral Fever. L. Franz.—p. 42.
Reconstruction of Eyelids. H. Joseph.—p. 52.
To Line Frontal Sinus with Epithelium. A. Seiffert.—p. 66.
Present Status of Cancer from Surgical Standpoint. H. Simon.—p. 70.
Growth and Spread of Rectal Cancer. K. Winkler.—p. 112.
Treatment of Inoperable Cancer. Harttung.—p. 129.
Tumor in Carotid Gland. Harttung.—p. 142.
*Enlargement of the Prostate. W. Hirt.—p. 150.
Sarcoma of the Prostate. W. Lichtschlag.—p. 164.
Chondrosarcoma of Heel-Bone. P. Friebel.—p. 167.
Angiomas of the Liver. H. Nossen.—p. 170.
Operative Treatment of Diaphragmatic Hernia. M. Weichert.—p. 180.
Thirty-One Cases of Abdominal Contusion. R. Reichle.—p. 185.
*Decapsulation of the Kidney. V. Hoffmann.—p. 202.
Abscess in Spleen with Sequestra. K. Scheyer.—p. 225.
*Joint Stumps. E. Lehmann.—p. 242.
Treatment of Rachitic Curvature of Legs. H. Legal.—p. 251.

Mammary Cancer.—Küttner gives illustrations of a hitherto undescribed form resembling Krompecher's basál-cell carcinoma. He also describes two cases of cancerous erysipelas developing six months after mammectomy, while in a third case the erysipelas developed before the operation, and rendered the cancer inoperable. The name he gives the rapidly spreading flaming redness is not based on the histologic findings but on the resemblance to erysipelas.

Purulent Meningitis.—Hauke rinsed out the subarachnoid space with methylene blue solution in eleven cadavers, with openings and counter openings in different segments of this space. The results were encouraging for drainage in purulent meningitis by way of the cisterna cerebromedullaris, opened by the Murphy technic. The subarachnoid space can thus be drained from the bottom of the cerebellum to the lumbar region. But this does not influence the surface of the cerebrum and the posterior surface of the spinal cord except indirectly by the reduced pressure in the fluid, which may facilitate the escape of purulent fluid in the ventricles. Of all the procedures attempted to drain the ventricles, Payr's method seems least dangerous, rinsing through puncture of the corpus callosum to the open cisterna cerebromedullaris. The danger is that the foramen may be or become obstructed.

Cerebellopontile Tumors.—Mertens reports the successful removal of both a sarcoma and a cystic tumor from the cerebellopontile space. The man is still in good health, fourteen years later.

Fever of Central Origin.—Franz compares the cases on record with one personally observed in which, seven hours after probable mechanical injury of the heat center in operating for hydrocephalus, the temperature ran up to 41 C. The sedative effect of dimethyl-amido-antipyrin on the brain was illustrated anew by the prompt subsidence of the temperature to normal under the influence of one dose. The temperature then ran up again to 41.9 and the child died.

Enlargement of the Prostate.—Hirt's 150 operative cases in the course of twenty-two years have confirmed, he declares, that, with all its drawbacks, the Freyer technic is still the method of choice in treatment of hypertrophied prostate.

Decapsulation of Kidney in Acute Anuria.—Hoffmann confirms, by the findings in dogs and rabbits, that decapsulation has a remarkable stimulating action on the circulation in the kidney. It thus provides better conditions for the functioning of the organ, in addition to the immediate relief from excessive pressure. The urine curve from five clinical cases of eclampsia or nephritis shows the slowly progressive functional improvement. It seems useless in mercuric chlorid anuria; none were saved by it in twenty-nine cases he has compiled, in addition to the twenty-four on record, with recovery of only two patients. The general anesthesia and operative loss of blood explain most of the benefit from decapsulation in eclampsia, but it has exceptionally proved a life saving measure when the convulsions persisted after delivery and prophylactic treatment. It has no influence on the local circulation in a small flabby kidney.

Joint Amputation Stump.—Tietze secures the advantages of an exarticulation stump, when there is not enough skin to cover the stump, by cutting a wedge in the long bone just above, and turning back the joint bones—as on a hinge—against this shaft.

Deutsche medizinische Wochenschrift, Leipzig

50: 327-358 (March 14) 1924

T.-A. Immunization in Diphtheria. H. Dold.—p. 327.
*Polycythemia and Virilism with Ovarian Tumor. A. Bingel.—p. 330.
Experiments with Insulin. W. Löwe.—p. 332.
*Treatment with Bacteriophages. K. Markuse.—p. 334.
Leukocytes After Food Intake. E. Bath.—p. 336.
Thymol in Acute Respiratory Infections. Apel.—p. 337.
Danger of Curettement of the Posterior Wall of Tuberculous Larynx. Boenninghaus.—p. 339.
Abortive Treatment of Gonorrhea. M. Joseph.—p. 339.
Diagnosis of Gastro-Intestinal Diseases. F. W. Strauch.—p. 341.
Belt for Plate in Roentgenography. H. Lewin.—p. 341.
Survey on Infectious Diseases. O. Moog.—p. 342.
Control of Tuberculosis and Venereal Disease in Soviet-Russia. N. Semaschko.—p. 344.
Tuberculosis Welfare Work in Dortmund. Häffner.—p. 346.

Disappearance of Polycythemia and Regression of Virilism After Removal of an Ovarian Tumor.—Bingel observed a woman who developed in her thirty-seventh year a beard and masculine hypertrichosis. Nine years later she had polycythemia (8,900,000 erythrocytes with 130 per cent. hemoglobin) and diabetes. All these changes disappeared after extirpation of the internal sex organs. He attributes the changes to the presence of a tumor of the ovary, the structure of which resembled a corpus luteum.

Treatment with Bacteriophages.—Markuse had good results in experimental cystitis of guinea-pigs with intravesical introduction of a specific bacteriophage (anticolon bacillus).

Klinische Wochenschrift, Berlin

3: 465-512 (March 18) 1924

Encephalitic and Catatonic Motor Disturbances. A. Bostroem.—p. 465.
Hunger Theory of Pregnancy Toxemia. E. Opitz.—p. 469.
*Perlingual Application of Insulin. B. Mendel et al.—p. 470.
*Microscopy of Blood in Pregnancy. E. Wöhlisch and P. Bohnen.—p. 472.
Radix Primulae as Expectorant and Diuretic. F. Gaisböck.—p. 474.
*Bruck's Syphilis Reaction in 12,000 Tests. L. Becker.—p. 479.
*Metabolism of Cancer Cells. E. Wiechmann.—p. 481.
"Fibrillation and Flutter." S. de Boer.—p. 482.
Blocking of the Reticulo-Endothelial System. F. Rosenthal et al.—p. 482.
*Blood from Umbilical Cord and from Mother. P. György.—p. 483.
Case of Pluriglandular Insufficiency. S. Hirsch and J. Berberich.—p. 483.
*Epidemic Poliomyelitis. W. Wernstedt.—p. 486.
*Valsalva's Experiment. E. Mosler and Balsamoff.—p. 491.
Simplified Sedimentation Test. E. Goetze.—p. 507.
Death of Jacques Loeb. R. Höber.—p. 510.

Perlingual Application of Insulin.—Mendel and Wittgenstein applied the dry insulin substance on the tongue in animals and men. It lowered the glycemia.

Microscopy of the Blood in the Pregnant.—Wölisch and Bohnen confirm Zeller's observation on the formation of threads connecting erythrocytes in citrated blood. They found many of these in the blood from pregnant women. They believe that they consist of a gel of fibrinogen, and that they play a rôle in hemagglutination and increased speed of sedimentation.

Bruck's Syphilis Reaction in 12,000 Tests.—Becker tested 12,000 blood specimens for Bruck's reaction. The results were almost perfect in confirming the Wassermann reaction.

Metabolism of Cancer Cells.—Wiechmann observed a patient with meningeal metastases of cancer. Free cells were found in the cerebrospinal fluid which contained only 19 mg. glucose per hundred cubic centimeters. He points to other investigations which demonstrated the glycolytic potency of cancer cells in vitro.

Lipoid Content of Blood from Umbilical Cord and from Mother.—György determined the cholesterol and lecithin in the serum from the umbilical cord and from the mother. The mother's serum contained much cholesterol and a little more lecithin than normal. The serum from the umbilical cord contained very little cholesterol (54-83 mg. per hundred cubic centimeters) and less lecithin than the serum in older infants.

Epidemic Poliomyelitis.—Wernstedt reports his epidemiologic and clinical experiences with poliomyelitis, gathered especially during the Swedish epidemic in 1911-1913.

Valsalva's Experiment.—Mosler and Balsamoff review the results of Valsalva's experiment and add their own investigations. When a healthy person used the abdominal pressure after a deep inspiration, the blood pressure increased immediately (50-70 mm. mercury) and remained high during a few heart contractions (4-7); then it suddenly dropped for a few beats almost to the previous height and then to zero. The radial pulse disappeared. They found that this is due to a real passive evacuation of the heart. People do Valsalva's experiment unconsciously in a few instances of extreme exertion (jumping), but physical training should teach them to avoid it otherwise (running upstairs). The increase in blood pressure in the beginning of the Valsalva experiment (defecation in constipated persons) is dangerous with weak hearts and hypertension.

Medizinische Klinik, Berlin

20: 367-402 (March 23) 1924

*Testing "Bayer 205" in Africa. F. K. Kleine.—p. 367.
*Cosmetic Depilation. G. Nobl.—p. 369.
Malaria Treatment of General Paralysis. Reese and Peter.—p. 372.
*Insulin in Mild Diabetes. P. Mahler.—p. 376.
Auditory Aura. G. Herrmann.—p. 378.
Pyelography. Golm.—p. 379.
*Colloids and Serodiagnosis of Syphilis. R. Stern.—p. 381.
*Mátéfy's Reaction. F. Basch. —p. 384.
Survey on Tuberculosis in Children. Rietschel.—p. 387.
The Juvenile Courts. Nippe.—p. 400.

Testing "Bayer 205" in Africa.—Kleine reports on his trip to Africa undertaken to study the effects of "Bayer 205" in trypanosomiasis in man and cattle.

Cosmetic Depilation.—Nobl warns against the use of roentgen rays for cosmetic depilation. Electrolysis is the method of choice. Yet it is impossible in marked hypertrichosis because the many little scars would be visible. Unna's resin rod or the following similar prescription is harmless: tincture of iodin, 3 parts; turpentine, 6; castor oil, 8; spiritus collodii to 80 parts. The region has to be painted over thickly with the mass. It dries quickly and the painting is repeated twice. The edge is seized, and the whole thick film, with all the hairs embedded in it, is torn away.

Insulin in Mild Diabetes.—Mahler recommends occasional injections of insulin in light cases of diabetes ("dietary vacation").

Colloids and Serodiagnosis of Syphilis.—Stern discusses the significance of colloids in the serodiagnosis of syphilis. He isolated from every serum, with carbon dioxid, a fraction which is anticomplementary. The remaining euglobulin, however, contains the specific reagin if the serum is from a syphilitic. When a solution containing all the inorganic ions of the plasma is used to dissolve the euglobulin, the reaction is specific. The nonspecific positive reactions were due to the use of mere physiologic sodium chlorid solution. The syphilitic euglobulin sensitizes the lipoid of the antigen for coagulation by the electrolyte present.

Mátéfy Reaction.—Basch examined the serum from fifty patients with Mátéfy's method. He found it useless in diagnosis as well as in prognosis of pulmonary tuberculosis.

Münchener medizinische Wochenschrift, Munich

71: 355-388 (March 21) 1924

*Fermentative Dyspepsia. A. E. Lampé.—p. 355.
Protein Treatment of Gonorrheal Epididymitis. W. Patzschke and E. A. Hartmann.—p. 358.
*Surgical Importance of Paratyphoid N. E. Hesse.—p. 359.
Avidity of Antitoxins. V. R. Kraus.—p. 362.
Amino-Acids in Body Fluids. G. Wolpe.—p. 363.
Meinicke's Turbidity Reaction. H. Förtig.—p. 365.
Roentgen Diagnosis of the Duodenum. Stühmer.—p. 366.
*Postoperative Retention of Urine. S. von Stapelmohr.—p. 368.
*Treatment of Paralysis with Spirochaeta Duttoni Infection. Sagel. —p. 369.
*Treatment of Otosclerosis. H. Higier.—p. 370.
Pneumothorax Cannula. Zobel.—p. 371.
Death After Coitus. M. Flesch.—p. 371.
Dosage in Roentgen Therapy. L. Hahn.—p. 371.
Typical Fracture of the Radius. K. Port.—p. 374.

Fermentative Dyspepsia.—Lampé reviews the clinical symptoms and etiology of fermentative dyspepsia. The treatment, as recommended by von Noorden, starts with three days of fasting, followed by two weeks of a diet without carbohydrates (kefir, eggs, Swiss cheese—all in small meals). Then he allows carbohydrates of an easily absorbable type (sugar, fine flour, zwieback, vermicelli, milk). Not until this diet has been kept up for another two weeks is meat allowed; otherwise, it might cause a putrefactive dyspepsia. Later, the patient is trained gradually to all carbohydrates, including food with large amounts of cellulose.

Surgical Importance of Paratyphoid N.—Hesse has observed often in relapsing fever an infection with a member of the colon bacillus group, paratyphoid N. The prognosis is very serious (70 per cent. mortality in the septic form and 10 per cent. in the enterocolitic type). Surgical complications are frequent. Cellulitis, purulent affections of the sacro-iliac synchondrosis and hip joints, and spondylitis are important. It is interesting that severe pains in these joints are characteristic in all the patients with this mixed infection. The bacillus does not play any rôle in typhus.

Postoperative Retention of Urine.—Stapelmohr confirms Vogt's results with intravenous injection of 5 c.c. of a 40 per cent. solution of hexamethylenamin after operations. The patients were able to urinate spontaneously. The results were less constant when the drug was given by mouth. Two patients among seventy had blood in the urine twenty-four hours after the injection.

Treatment of Paralysis with Spirochaeta Duttoni Infection.—Sagel used with fair results the African relapsing fever infection in the treatment of seventy-two patients suffering from general paralysis. None of them died from the superposed infection.

Treatment of Otosclerosis.—Higier observed a marked improvement in a case of otosclerosis after an attempt to commit suicide with arsenic. He knows of another similar case, and recommends treatment by large doses of arsenic in the practically hopeless cases of this affection.

Zentralblatt für innere Medizin, Leipzig

45: 229-240 (March 29) 1924

*Toxicity of Urea. E. Becher.—p. 229.

Toxicity of Urea.—Becher observed toxic symptoms and occasionally the death of the animals after intravenous injections of 1 or 2 gm. of urea per kilogram. The disturbances were especially pronounced in fasting animals.

Casopis lekaruv ceskych, Prague

63: 509-544 (March 29) 1924

Dispensary Work. V. Libensky.—p. 509.
*Stierlin's Phenomenon. A. Sigmund.—p. 515.
*Chronic Progressive Ophthalmoplegia. Pelnár.—p. 519.

Scleroma in Moravia. Ninger.—p. 525. Conc'n.
*Treatment of Pregnancy Toxemia. F. Horálek.—p. 527.

Stierlin's Phenomenon.—Stierlin described in ileocecal tuberculosis, in from six to eight hours after the contrast meal, a filling of the ileum and transverse colon while the affected parts were empty. Sigmund reports eight operative cases in which the patients had presented this sign. He considers it a manifestation of spastic contractions of the diseased portions of the bowel. The phenomenon is absent when the entire wall is infiltrated. It is not a reliable sign of ileocecal tuberculosis.

Chronic Progressive Ophthalmoplegia.—Pelnár describes a case of chronic external ophthalmoplegia with a progressively increasing paresis affecting especially the motor parts of the seventh to the eleventh nerves, and with atrophy of the muscles of the neck, shoulders and upper extremities.

Treatment of Pregnancy Toxemia.—Horálek injected extracts from corpus luteum in hyperemesis and other toxemias of pregnancy. The results were satisfactory in twenty-four cases; he attributes two failures to the evident wish of these patients to get rid of the pregnancy.

Tohoku Journal of Experimental Medicine, Sendai

4: 601-684 (March 28) 1924

*Ether and Epinephrin Output. S. Kodama.—p. 601.
*The Blood After Kidney Operations. M. Koike.—p. 643.
A Solvent for Blood Stains. R. Tsukasaki.—p. 663.
Study of Serum Protease. S. Kimura.—p. 671.
Cholesterase in the Blood and Organs. T. Nomura.—p. 677.

Influence of Ether on Epinephrin Output.—Kodama found in his experiments on dogs that ether anesthesia decreases the rate of epinephrin output from the suprarenal glands.

Blood Changes After Kidney Operations.—Koike sums up his investigations in the statement that any operation on the kidneys is followed by a transient increase in red blood corpuscles, leukocytosis, increased viscosity dropping later even lower than normal, reduction of lymphocytes, and disappearance of eosinophils.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

1: 1381-1488 (March 29) 1924

*Acute Osteomyelitis in Infants. G. H. Nord.—p. 1382.
Cystic Adenoid Epithelioma (Brooke). J. H. Broers.—p. 1390.
*Gastro-Intestinal Bleeding in Tabes. S. Poliakoff.—p. 1396.
*To Keep Diphtheria Bacilli Alive. M. van Riemsdijk.—p. 1402.
*Ruptured Ectopic Pregnancy. A. G. J. Hermans.—p. 1410.

Osteomyelitis of the Upper Jaw in Infants.—Nord contends that this bone affection is more common than would be assumed from the few cases on record (32 to 1914 with 50 per cent. mortality). He has himself encountered 4 cases in the last year and a half, and knows of 9 other Netherlands cases since 1919. It may appear as early as the second to tenth week. There may or may not be swelling of the cheek, edema of the lower lid, exophthalmos and invasion of the ethmoidal or sphenoidal sinus. Left untreated, there may be metastases in lung, heart, meninges or long bones. In his own group of 4 infants, there were metastatic abscesses in orbit and sinuses, with necrosis of the sphenoid, and involvement of the arm and lung. One infant, aged 4 months, died. In 7 of the 9 cases, the ophthalmologist had been consulted, but there were fistulas in the mouth that should have rendered an early diagnosis easy. They had been overlooked or malinterpreted. It is still a question whether the process in the upper jaw is primary or secondary, by way of the nose or the blood. Simple outlet for the pus is best realized by an incision in the alveolar process where the fistula opens. After removal of teeth and sequestra, the cavity rapidly cleared up. He did not curet or tampon, merely rinsing out the cavity with saline several times a day. The milk teeth have always suffered severely, but nothing has been published yet as to the effect on the permanent teeth.

Gastro-Intestinal Hemorrhage in Tabes.—In Poliakoff's case the crises of pain were in the rectum and were sometimes accompanied with superficial bleeding. Bensaude and Singer have each reported a case of recurring intestinal bleeding in a tabetic, but independent of the crises. In another case, gastric crises with incessant vomiting were sometimes hemorrhagic. An inoperable gastric cancer was found at last.

Duration of Vitality of Diphtheria Bacilli.—Van Riemsdijk says that the death of the bacilli on the cotton swab can be prevented by keeping the swab from drying. Especially useful for this is a horse serum-agar gel to keep the swab in as it is sent to the laboratory. This promotes the vitality and growth of the bacilli. He mixes the sterilized horse serum with a 0.5 per cent. heated and cooled agar solution.

Ruptured Ectopic Pregnancy.—Hermans reports a case in which the extra-uterine pregnancy had ruptured into the bowel during septic parotitis. Spontaneous healing ensued after expulsion of a macerated fetus, 10 cm. in length, through the anus. He compares it with the similar cases on record.

Hospitalstidende, Copenhagen

67: 177-192 (March 19) 1924

*Medicolegal Aspect of Epidemic Encephalitis. A. Wimmer.—p. 177.
Complement Fixation in Tuberculosis. T. Hansen and C. H. Würtzen.—p. 185. Cont'd.

Chronic Epidemic Encephalitis from Medicolegal Standpoint.—Wimmer states that twelve of twenty-five surviving children with this disease in his practice have developed more or less pronounced changes in mind and character, unfitting them for normal life. Many of such children will be found in reform schools later or in insane asylums, although in reality they often have a still active infectious process in the brain. He describes the case of one youth arrested for exhibitionism and molesting little girls. Wimmer demonstrated to the court that the lad's actions formed part of the psychotic symptoms entailed by his chronic epidemic encephalitis. Only careful search for neurologic symptoms, disturbances in the involuntary nervous system and the history of the case will differentiate the antisocial imprint from this cause. It is especially difficult on account of the lack of congruence between the neurologic and psychotic symptoms both as to varying intensity and coincidence. To a certain degree, the character anomalies are amenable to discipline, but this should be under medical supervision and treatment. Arson, homicidal tendencies, cruelty to animals, attendants and others, obscenity, irritable imbecility, lying, stealing and fugues are among the symptoms observed.

Ugeskrift for Læger, Copenhagen

86: 287-306 (April 3) 1924

*Syphilitic Knee-Joint Process. C. Gram.—p. 287.
*The Venous Blood in Valvular Disease. C. Schwensen.—p. 289.
*Paratyphoid and Milk. Djørup.—p. 291.
*Iritis from Gonococcus Sepsis. Sander-Larsen.—p. 294.
Parenteral Vitamin Treatment of Xerophthalmia. R. G. Petersen.—p. 296.

Traumatic (?) Effusion in Right Knee.—Nothing but the bilateral lack of the knee-jerk gave the clue to the severe knee-joint process with profuse effusion which had followed trauma and been exaggerated by another contusion later. Syphilis acquired fifteen years before had escaped detection until this time.

The Blood After Venesection in Treatment of Pulmonary Edema.—The venous blood findings daily for more than six weeks in the case of severe mitral stenosis described by Schwensen confirm the beneficial influence of venesection not only on the pulmonary edema but on the cardiac insufficiency from the valvular disease. The relief was more pronounced than had been realized by long bed rest and digitalis.

Paratyphoid and Milk.—Djørup emphasizes that it would be better for the public to pay a cent more for milk to pay the expense of medical supervision of the personnel of the dairies rather than to be content with supervision of the cows and the fat content of the milk. He traced a small epidemic of paratyphoid to the child of one of the milkers.

Recurring Iritis from Gonococcus Sepsis.—Fourteen years of repeated attacks of iritis with stormy onset but benign course under prompt treatment were finally explained by discovery of gonococci in the prostate secretion after repeated negative tests.